



DICK SMITH ELECTRONICS

PTY LTD

Electronics Enthusiasts
& Mail Order Catalogue
1985/6



**"Over 500 new and exciting products.
32 pages of valuable reference data.
24 hour Toll-free order line: 008 22 6610"**

\$1

Our computer keeps you up to date . . .

If you're buying by mail, the last thing you want is a hand-written scrawl trying to tell you the goods are out of stock. Or that you paid too much. Or that there will be a delay while who knows?

That's what you get from a lot of the amateur Mail Order firms. And worse.

At DSKpress, on the other hand, EVERYTHING is handled by our IBM System 38 computer. It keeps a record of your order. Your payment. The despatch of your goods. The method of despatch. The items automatically back-ordered. And any credits or monies owing.

What's more, this information is fully itemised on the invoice that accompanies your goods. No scraps of illegible gibberish. No credit notes to get lost. No waiting weeks for 'packing slips'. It's all there in front of you.

If you want to play mail-order roulette, deal with the amateur mail order companies.

If you want service, satisfaction and security - trust DSKpress.

DSK
PRESS

17 years reliable service to the
hobbyists and enthusiasts of Australia.

Dear Enthusiast,

In your hand is the biggest, brightest and best Dick Smith Electronics catalogue ever. Well over three thousand products (including 500 plus new ones!) with something for everyone. But it's you, the hobbyists and enthusiasts, that we strive hardest to look after - better than any other electronics supplier in Australia.

From the many letters that you send us, we believe that 99% of the time, we succeed. Thanks for your continued support: this year we'll try to make it 100% of the time.

You've probably noticed that there's a different person on this page from last year! No, Ike Bain hasn't left Dick Smith Electronics. He's gone across to California to start Dick Smith Electronics USA, Inc. Some may think that's carrying coals to Newcastle: we're convinced that there will be huge benefits for us - and you - in having an offshoot in the USA.

Ike continues to be a director of DSE, Australia, and will be calling back here three or four times a year to keep us firing on all cylinders!

I'm sure you'll join with us in wishing Ike and his team every success.

Speaking of success, 1984 was exactly that for Dick Smith Electronics and 1985 is looking great!! We've been able to expand our retail stores (even closer to you!) and our head office services. Staff training, quality control, better support (particularly high-tech products) and better warranty & general service are just some of the areas we've paid particular attention to.

We hope that you'll notice the difference.

Don't forget, if you have any ideas or suggestions (or even complaints) about our services, products, etc, I'd like to hear from you. You can write to me c/- any Dick Smith Electronics store.

With regards,

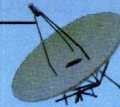
Mike Wilson

Mike Wilson
Managing Director



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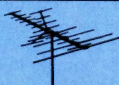
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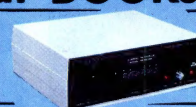
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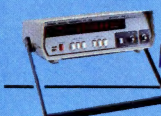
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PLEASE NOTE: This catalogue is valid for the period April 1985 to March 1986. During the life of this catalogue, however, currency fluctuations, Government policies and other causes beyond our control may force price changes, product differences, etc. Please enquire at your nearest Dick Smith Electronics store for latest prices and information.

Dick Smith Electronics:

A year of expansion for Dick Smith Electronics: with big benefits for you!

As our Managing Director mentioned, Ike Bain and his team from Australia have now opened the First Dick Smith Electronics store in the home of electronics: Silicon Valley, USA!

This in addition to another six stores in New Zealand and the dozen or so we've opened here in Australia since our last catalogue.

Our US operation will have immediate benefits for the hobbyists of Australia. Like us, you've probably seen those adverts in US magazines full of interesting bits and pieces: the type of goodies we never get to see in Australia...

Now we'll get to see them! As well as a retail operation in its own right, our US division is acting as a buying office for Dick Smith Electronics in Australia and New Zealand. Because they're right on the spot, they'll be able to grab some of the bargains for us - and for you!

And because of the huge number of Dick Smith Electronics stores we need huge quantities of stock. This gives us incredible buying power - and lower prices for you.

You reap the benefit!

In the meantime, back here in Australia, we've been making it even easier and better for you to shop at Dick Smith Electronics.

First of all, over 500 new lines. Right through the range, from components to computers. And we've up-graded many existing lines, too.

For our DSXpress customers out the back of Woop Woop (or even further!) we've introduced a toll-free order line: ring us for the cost of a local call from anywhere in Australia. And we'll have your order on its way within 24 hours.

For our retail customers, we not only have all the new stores - we're opening them closer to you.

For the real experimenters, we have satellite TV earth stations! This very latest technical innovation is proving incredibly popular in remote areas, too: TV for the very first time!

For the amateur operator, we've greatly expanded our range of quality Yaesu amateur equipment. And there's more in CB and marine radio too!



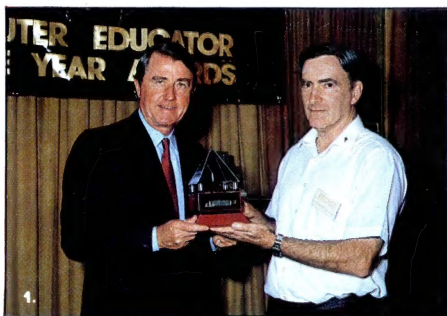
We now have our own research and development department - not only sourcing new products, but designing new and exciting kits to build. You'll find pages of new things to build this year. And there are more coming all the time!

If this is the first Dick Smith Electronics catalogue you've picked up, don't be frightened by the 'high tech' products. Instead, try your hand at building some of the simple kits (Fun Way Into Electronics is a great place to start!)

If you're an enthusiast of old, you'll know how that first step opened up a whole new world. And you'll know that the Dick Smith Electronics catalogue is the one place to find not only everything in electronics, it's also the place to find valuable data. It's included free, with our compliments.

Incidentally, while this catalogue was in production, the Australian dollar was receiving a battering - with the result that all imported goods rose in price.

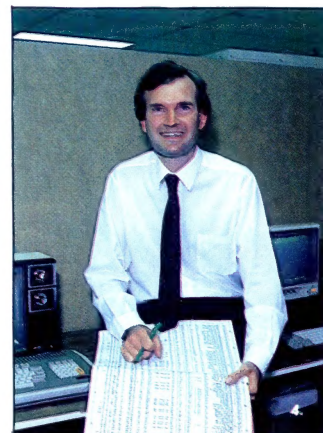
This catalogue reflects those price rises... and there is no certainty that it's over yet. You can be assured, however, that when the dollar rate improves, Dick Smith Electronics will pass the savings on to you.



(1) Bro Vin Hawley of St Edmund's School for the Blind: DSE's 'Computer Educator of the Year', accepting his award from Hon Neville Wran, Premier of NSW.

(2) Our Service Centre is one area major improvements have been made during the past 12 months.

(3) Mike Wilson launching the 1985 Dick Smith Rally '85 Championship. DSE is the major sponsor for this series.



(4) Former Managing Director of DSE, Ike Bain, now President of Dick Smith Electronics, Inc., USA.

expanding world wide



Australian Store Locations

NSW

Cnr. Swift & Young Sts.
T55 Terrace Level
Shop 1, 65-75 Main St
613 Princess Hwy
Oxford & Adelaide Sts
531 Pittwater Rd
Campbelltown Mall, Queen St
Shop 235, Archer St Entrance
147 Hume Hwy
162 Pacific Hwy
315 Mann St
4 Florence St
Elizabeth Dr & Bathurst St
450 High St
173 Maitland Rd, Tighes Hill
Lane Cove & Waterloo Rds
George & Smith Sts
The Gateway, High & Henry Sts
818 George St
6 Bridge St
125 York St
Cnr Kable Ave & Brisbane St
263 Keira St

ACT

96 Gladstone St

VIC

Creswick Rd & Webster St
145 McCrae St
Shop 46, Box Hill Central, Main St
Cnr Hawthorn Rd & Nepean Hwy
260 Sydney Rd
1150 Mt Alexander Rd
Nepean Hwy & Ross Smith Ave
205 Melbourne Rd
291-293 Elizabeth St
Bridge Rd & The Boulevard
Springvale & Dandenong Rds

Albury (060) 21 8399
Bankstown Sq. (02) 707 4888
Blacktown (02) 671 7722
Blakehurst (02) 546 7744
Bondi Junction (02) 387 1444
Brookvale (02) 93 0441
Campbelltown (046) 27 2199
Chatswood Chase (02) 411 1955
Chullora (02) 642 8922
Gore Hill (02) 439 5311
Gosford (043) 25 0235
Hornsby (02) 477 6633
Liverpool (02) 600 9888
Maitland (049) 33 7866
Newcastle (049) 61 1896
North Ryde (02) 88 3855
Parramatta (02) 689 2188
Penrith (047) 32 3400
Railway Sq (02) 211 3777
Sydney (02) 27 5051
Sydney (02) 267 9111
Tamworth (067) 66 1961
Wollongong (042) 28 3800

Fyshwick (062) 80 4944

Ballarat (053) 31 5433
Bendigo (054) 43 0388
Box Hill (03) 890 0699
East Brighton (03) 592 2366
Coburg (03) 383 4455
Essendon (03) 379 7444
Frankston (03) 783 9144
Geelong (052) 78 6766
Melbourne (03) 67 9834
Richmond (03) 428 1614
Springvale (03) 547 0522

QLD

293 Adelaide St
166 Logan Rd
Gympie & Hamilton Rds
Cnr Queen Elizabeth Dr & Bernard St
Cnr Gold Coast Hwy & Welch St
Bowen & Ruthven Sts
Ingham Rd & Cowley St, West End

SA

Wright & Market Sts
Main South & Flagstaff Rds
Main North Rd & Darlington St
24 Park Terrace

WA

Wharf St & Albany Hwy
66 Adelaide St
William St & Robinson Ave
Centreway Acde, Hay St

TAS

25 Barrack St

NT

17 Stuart Hwy

Brisbane (07) 229 9377
Buranda (07) 391 6233
Chermside (07) 359 6255
Rockhampton (079) 27 9644
Southport (075) 32 9863
Toowoomba (076) 38 4300
Townsville (077) 72 5722

Adelaide (08) 212 1962
Darlington (08) 298 8977
Enfield (08) 260 6088
Salisbury (08) 281 1593

Cannington (09) 451 8666
Fremantle (09) 335 9733
North Perth (09) 328 6944
Perth City (09) 321 4357

Hobart (002) 31 0800

Stuart Park (089) 81 1977

New Zealand Store Locations

98 Carlton Gore Rd
1795 Great North Rd
26 East Tamaki Rd
For & Commerce Sts
450 Anglesea St
154 Featherston St
Victoria St & Bealey Ave
Manse & Commerce Sts

Newmarket (09) 54 7744
Avondale (09) 88 6696
Papatoetoe (09) 278 2355
Auckland (071) 38 9974
Hamilton (071) 39 4490
Wellington (04) 73 9858
Christchurch (03) 504 405
Dunedin (024) 74 1096

United States Store Location

390 Convention Way

Redwood City, Cal. 368 8844



It's
Arrived!

DSE SATELLITE

WILL THIS PICK UP AUSSAT?

The Department of Communications has issued a statement regarding the sale of satellite television reception equipment and possible misunderstanding amongst consumers.

We support the Department's efforts in making people aware of the fundamental differences between equipment available now, and that which is suitable for the Aussat communications satellites which should be in orbit during the life of this catalogue.

The following points must be kept in mind when considering satellite TV reception:

The Dick Smith Electronics Satlink System, like all other satellite receiving systems currently available, will not be capable of receiving signals from Aussat. For a start, the signals from Aussat will be on the 12GHz 'K' band, and will use a new transmission system called 'B-MAC'.

However, almost all international satellite television traffic is in NTSC, and even after Aussat is launched, most international feeds will probably continue to use the Intelsat series. Even if this proves not the case, the AFRTS will certainly continue, along with other international feed services.

Dick Smith Electronics plans to have a system available early next year capable of receiving Aussat and possibly other K band satellites.

RECEIVING SYSTEM

THE SATELLITE RECEIVING ANTENNA

... or 'Dish'

The technology of tomorrow has arrived: home satellite TV! Right now, here in Australia, people are watching programs from space. And more are joining them all the time.

The programs they are watching are many and varied. Most choose to watch the signals from Intelsat IVA, in orbit over the Pacific Ocean. On this 'bird' are feeds for American Armed Forces Radio & TV Service (AFRTS), Australian ABC, Channel 7 and Channel 9 network news feeds from America, etc. In addition, many people watch programs beamed from the Indonesian 'Palapa' system; the Russian 'Gorizont' system and, at times, others.

It is anticipated that many more satellites will be watchable in the future from many parts of Australia.

Reception varies from excellent to watchable depending on location and equipment; with the system on these pages, more than adequate results have been obtained at our Sydney headquarters, and our test site near Gosford, NSW.

While it is expected that the ABC feeds and possibly the 7 & 9 network feeds will be switched to Aussat when it is launched, the Dick Smith Electronics Satlink System will be suitable for all future Intelsat satellites, as well as Palapa and Gorizont, etc. The dish is one of the most important parts of the system. It can make the difference between a picture and ... We have chosen this Australian made dish after a great deal of research and investigation into different brands and types.

We chose a 3.5 metre model as the best compromise between room and performance. It is made of fibreglass petals both for minimum weight and for best surface accuracy. It has a gain of 41dB.

It is designed for ground mounting (making erection much, much easier!) with adjustments for azimuth and elevation. Special instructions have been written by our research and development staff to allow even the beginner to put this dish up and aim it properly. Cat D-8150

\$1800



ESS-340 Satellite Receiver



\$499

RECEIVER -
IF: 70 MHz input level -35 to -5dBm
 bandwidth 12MHz
Threshold: less than 6dB C/N
De-emphasis: is 625 line PAL.
Video: Output 1V P-P adjustable
 Output impedance 75 ohms
 Switchable output polarity
 40dB energy dispersion removal
 Subcarrier 5.4 to 8.0 MHz (tunable)
 (Crystal preset 6.8MHz):
 75 microsecond de-emphasis
 600 ohm unbal. output impedance
 -5dBm nominal output level

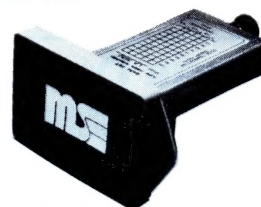
DOWNCONVERTER-
 Input frequency range: 3.7-4.2GHz
 Input level: -30 to -50dBm at
 50 ohms
Noise Figure: 15dB nominal
Image Rejection: 18dB nominal
IF output: 70 MHz, 75 ohms
 impedance
Supply Voltage: 15 to 18V DC

and a 55 degree Kelvin noise temperature. Many LNA's you'll see around cannot hope to match this. And they won't give you a worthwhile result, either. Cat D-8000

Noise figure (at 26 C): 50 to 55 degrees K
Frequency Range: 3.7 to 4.2GHz
Gain: 37dB min, 40dB nominal
Voltage: 14 to 23 volts at 60mA max
RF input waveguide: CPR 229G flange
RF output: Female 'N' connector
Weight: 400 grams

LOW NOISE AMPLIFIER

Often regarded as the 'heart' of a satellite TV system. If you don't have a very low noise amplifier, you won't get a decent picture. The LNA we've chosen for the Satlink System is the MSE LA-3800 made in the USA to exacting standards to give the best possible performance. It is specifically made to cover the 4GHz 'C' band used by Intelsat IVA, V, etc. The LNA has a 40 dB gain,



\$1100

CHAPPARAL FEED HORN

The feed horn is also an essential part of the system, being replaced at the focal point of the receiving dish. It acts as a 'collector' of signal ready for processing by the Low Noise Amplifier. Obviously the feed horn must be manufactured to incredibly tight tolerances to perform properly. The feed horn chosen for Satlink System is the famous Chapparral Super Feed, regarded in the United States as the industry standard. Polarisation correction is fitted to allow reception of signals from the Intelsat satellites. Cat D-8200

\$89

Read all about it...

There's a lot to read about in this fascinating new world of Satellite TV. Whether you're interested in watching commercial satellite TV, or even amateur satellite TV, these books make fascinating reading.

The Satellite Experimenter's Handbook

by Martin R. Davidoff

All you need to know to communicate with the heavens. This one book tells all that's necessary to pick up signals from orbiting satellites. Whether your interests be in Amateur Radio, weather or TV-broadcast spacecraft, you'll find what you need to know! Give it a go!

Cat B-2235

\$22⁹⁵

Complete Guide to

Satellite TV

by Martin Clifford

- 250 pages. If you've ever tried to find information on TVRO reception - details on siting and installing TVRO base stations or specifications on satellite orbit - uplinks and downlinks - you've probably ended-up down yourself. Well finally someone has come up with a single publication which covers everything on Satellite TV. Your shelf would be lonely without it.

Cat B-1841

\$16⁵⁰

Home Satellite TV

Home Satellite Television by Rick Cook & Frank Vaughan 326 pages. Can YOU set up a personal Earth station? Is it a practical alternative - what about costs? The answer to these and many other questions you may have about Home Satellite TV are contained in this new state-of-the-art source-book. If you're thinking about your own station or just curious this one has the answers.

Cat B-1840

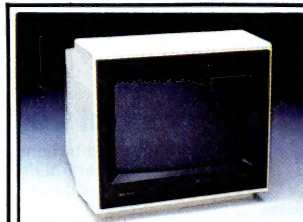
\$17⁵⁰

The World of Satellite TV

Long and Keating - 224 pages

What an amazing book! Covers just about everything you'd ever need to know about satellite TV: the satellites, the equipment, the programming - even the installation and legal questions! And the appendices and lists contain almost as much info as the book itself. We've only just found this book - just in time for satellite TV! Cat B-1842

\$22⁹⁵



NTSC MONITOR

Most US signals currently transmitted from satellites are in NTSC (the US system). Because the receiver processes the signal in whatever format it receives, you will require an NTSC receiver or monitor to watch it! Until now, NTSC monitors have not exactly been easy to get in Australia!

Our RGB computer monitor includes provision for NTSC video input, so is ideal for use in the Satlink System. And when you're not watching satellite TV, the monitor is among the best you'll find for computer use (RGB only) Cat X-1193

\$649

HOME SECURITY HOME SECURITY



NEW FOR 85

Wireless Home Alarm System



**No wiring needed
easy to install!**

Now you can have the versatility of five separate zones of protection in a home alarm system! Installed in next to no time - WITHOUT wiring! The central processor allows you to hook up to five different zones to protect your home or yourself (with the personal remote control).

All that needs to be done is to connect your central processor to the power source, set the code on your remote devices and the system is operating. Your Dick Smith central processor features: Four function modes (bell, alarm, panic, silent). Five processing zones. Instant/delay switch. Visual &/or aural indication. Bell or alarm aural response. 32 wireless system codes. Has provision for external siren speaker, and normally closed trigger output. Operates from 16V AC with 12V DC backup. This is an ideal system for home units and flats or anywhere wiring is difficult to conceal. Which is probably just about everywhere! The central processor is compact and attractive and can be easily installed on bookshelf or concealed in the cupboard or drawer. It's great value for a system that can be easily packed up and moved with you.

- Eliminates hours of work
- Ideal for holiday homes
- Take it with you!
- Expandable to meet your needs

Rechargeable Back-up Battery
Made to directly fit internally in the control processor unit. 12V @ 1.2AH. Cat S-3315 **\$22⁵⁰**

Whole System (Unit shown above plus all three devices shown below)

Because every home/office/factory etc is different, we offer this unique alarm in two forms. The whole Central Processor unit shown above, plus remote reed switch units and remote infrared sensors, as shown below. To this, you can add more of the individual units shown below as you require to complete the system to your specifications. Comes complete with AC power supply. Cat L-5120

DOC Approval No 243011

\$349

Separate Optional Devices



Remote reed switch

A magnetic switch and digital coding transmitter to use in conjunction with your Central Processor. The primary function of the switch is to protect entries and exits. When the magnetic connection is broken the transmitter relays the information to the processor which sounds the alarm.

Cat L-5126

Has N.C. contact system - other similar switches can be added in series to protect more than one point.

\$39⁹⁵



Infra red sensor

The latest advance in intruder detection technology. Detects rapid changes in body temperature and transmits the signal to the central processor. Harmless to humans and animals. Each unit covers 64sq. metres. And there are fewer false alarms! Features adjustable control zone window for precise detection. Cat L-5122

\$119

A personal aid for the Handicapped

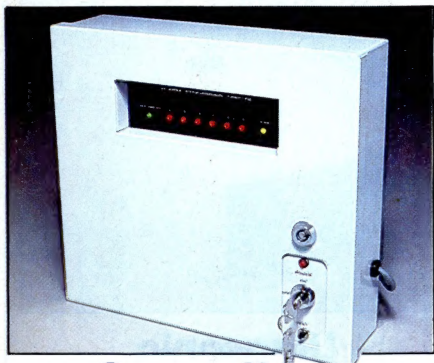


Personal Remote Control

This hand held transmitter is used to remotely control your Central Processor. Select the operating mode or use the panic button for emergency calls. Perfect control at the push of a button without having to raise yourself from your chair. Cat L-5124

\$39⁹⁵

Control Units



Security Centre

This is the type of alarm system the professional installers charge you \$500-\$1000 for ... and more!

This is it! The most professional alarm system we've ever seen - and it's suitable for homes, offices, factories ... you name it! With six individual sectors all fully controllable for instant or delayed alarm, each able to isolate and each triggerable by a huge range of sensors: the type of alarm used by banks, etc. where security is paramount.

Imagine how it would protect your home!

Housed in a heavy steel case with inbuilt tamper protection, complete with mains power supply and provision for back-up battery, this alarm features the latest 'wire-out' proof sensor circuits for optimum protection. A security key operates both the alarm itself and the alarm case.

Features:

- ★ Resistive loop sensing suits both n/o & n/c alarm sensors. Bridging out or cutting sensors will trigger alarm.
- ★ Any sector can be isolated while the rest of the alarm remains on: eg watch TV in one section of house while the rest is protected!
- ★ Six different sectors, all with LED indication to show sector status.
- ★ Includes fire detector provision.
- ★ Suits most types of detection devices: reed switches, motion detectors, foil tape, panic buttons, glass breakage detectors, strain detectors, etc.
- ★ Comprehensive manual supplied: by following this carefully, most handymen should be able to install one of these amazing systems!

Cat L-5100

\$199

HOW TO USE THESE CONTROL UNITS

Your alarm system can be simple or as complex as you wish to make it. All you do is add the necessary alarm sensing devices to protect the areas of interest.

Sensing devices fall broadly into two categories, 'normally open'(NO) and 'normally closed'(NC). These refer to the state of the device when no entry is being detected. On a detection, this device switches to the opposite category (eg. a NO device closes, and a NC device opens).

Normally open devices are such things as pressure mats, heat switches, panic buttons, etc. which are connected to the alarm's 'instant' NO terminals.

Normally closed devices are such things as magnetic reed switches, window tape, key switches, etc.



2+2 Sector Push Button Code Controller

Deluxe push-button alarm controller offering the very latest in security - including a four digit code as used in major security installations.

With 2 protection zones and a 24 hour fire/emergency sector plus normal entry/exit sector, this system gives you, effectively, four zones of protection.

Attractive, tamper proof plastic case is housed on a heavy gauge steel frame for protection: it's made to look good as well as perform. The keypad gives you complete control and LED indicators show sector status. Controlling your system with a code has big advantages: (a) you can change the code at any time. (b) you don't have a key to lose, and (c) the code can be shared by several authorised users (great for commercial operation).

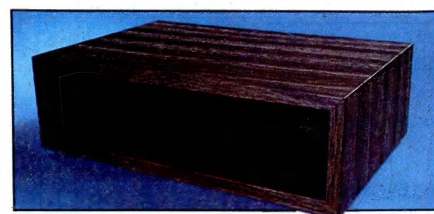
Comes complete with a comprehensive instruction manual for fully professional quality results

Features:

- ★ Two separately switched zones of control
- ★ Both normally open & normally closed inputs.
- ★ Entry/exit delay times adjustable from 5-125 seconds.
- ★ Bell times adjustable
- ★ Tamperproof
- ★ 12 Volt operation.

Cat L-5140

\$199



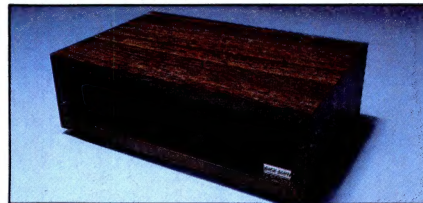
Ultrasonic Alarm

The 'Claytons' alarm: the ideal alarm for those who don't want to put in alarms! This one is fully self-contained, including siren speaker. Just place it on the shelf and its invisible ultrasonic rays detect movement. Fantastic for single room protection; can also be used as a sensor on a master alarm console.

Includes sensitivity control, operates from external 12V battery, from mains via optional plug-pack with internal battery back-up. Has provision for external speaker, sensors etc.

Cat L-5108

\$99



'Bookshelf' Alarm Module

A great alarm system for the home, flat, etc - because it doesn't look like an alarm! So anyone entering your property could easily be fooled into thinking this was a small speaker - until they were caught! This module has another big advantage too - apart from the sensors, it's fully self-contained. While there is provision for an external horn speaker, it has its own speaker, built in, hidden behind the 'speaker grille' front panel.

- Unit switches off siren after five minutes to comply with Australian noise pollution laws.
- AC/DC operation: optional AC adaptor can be fitted to use mains: unit automatically switches back to battery if mains is interrupted.
- Built-in test LED for checking that the system is working before you leave.
- Built-in remote switch terminals, allows for the installation of a switch that controls the alarm module from wherever you wish: great for the elderly, infirm, or nervous people!

Cat L-5102

\$59⁵⁰

2 sector controllers



Cat L-5055

The 2 sector alarm control module for the professional system you can afford! Featuring both normally open and normally closed inputs it will suit all normal detection devices. 12V AC/DC operation with LED sector indicators. Both delay and instant zone inputs. Adjustable entry, exit and alarm periods. A great price for the heart of your protection system.

\$69⁹⁵



Economy Control Module

The lowest price alarm module around - but it features pro quality circuitry and facilities. Both n/o and n/c inputs, suits all normal detection devices and has one minute alarm period. 12V DC operated - use batteries or mains plug-pack as required.

Cat L-5060

\$39⁹⁵

Go anywhere ...
with the
fantastic

FT-290R all mode



Can't decide on a hand held or mobile 2m rig? Get both! The brilliant FT-290 is built to go where you go, with provision for internal batteries (standard or nicad) or external 12V from your car or base supply. It comes complete with 1/4 wave whip antenna-or you can plug in an external whip or beam. And what's more, the FT-290 operates in all modes, (not AM!) so whatever your interest on 2 metres, the 290 can handle it! 10 memories with memory recall and full band scanning, memory back-up, etc etc. It's by far our most popular 2m transceiver. And small wonder!

Specifications:
Freq coverage: 144-148Mhz in programmable steps
Power output: 2.5/0.5W at 12V, CW/FM/SSB
Sensitivity: SSB/CW 0.5uV for 20dB S/N, 0.25uV for 12dB SINAD
Power: 8.5-12.5V DC

Cat D-2885

GREAT VALUE

\$529

(Takes 8 x 'C' size NiCads Cat S-3301 p.126)

YM-49 Speaker Mic

Great for mobile use where road traffic noise makes difficult hearing. Made just to suit the FT-290.
Cat C-1110

\$42⁵⁰



Carry Case

Protect your 290 while hoofing it! Avoid scratches & damage.
Cat D-2910

\$8⁵⁰

Mobile Bracket

Super convenient - allows you to instantly connect the 290 for mobile use to both power and antenna. Great security feature - take the set with you when you leave the car.
Cat D-2911

\$49⁰⁰

Flexi Antenna

The 5/8 whip is great - but if you're out and about you could damage or break it. Flexible rubber antenna fits into antenna hole thread, near indestructible.

\$10⁵⁰

Cat D-2912



**Economy 2m
hand-held**

FT 203 R

Yaesu's new compact & lightweight handy for the amateur who doesn't need all the frills: the brilliant new FT-203. Thumbwheel frequency switching makes for quick and easy channel selection - so no memories are required. But the FT-203 still packs a handy 2.5W output: more than enough for average simplex & repeater (inbuilt +/- 600kHz repeater split) usage. And for mobile use the FT-203 has a no-hands VOX system when used with the optional YH-2 headset. Safe driving - and more enjoyable QSO's.

- 450mAh battery included
- 144-148Mhz frequency range
- 5W input for 2.5W output (F3)
- Tiny size - 65 x 34 x 153mm - and only 450g including battery!
- Double conversion superhet receiver, 0.25uV (12dB) sensitivity

\$349

Cat D-3500

MH-12A2B Speaker Mic

Designed for the FT203, 209, 703 & 709 hand-helds. Allows greater flexibility (eg vehicle operation) with both mic and speaker in one unit. 3.5/2.5mm plugs.
Cat C-1112

\$42⁵⁰



Earphone/Microphone Headsets

Two models to choose from: YH-2 allows full VOX operation with FT203, 209, 703 & 709. YH-1 suits switch boxes (below) for manual PTT. Suits most recent Yaesu transceivers, may also work with other brands.

YH-2 Cat C-4200 Both one price: **\$32⁵⁰** ea

YH-1 Cat C-4195



Push-to-talk Switches

For use with YH-1 headset (see above) for better communication - especially mobile! Two-way switch with locking tx one way, PTT other. With LED indicator.
SB-1: Suits FT-208, FT708 & other ultra-mini 6 pin microphone sockets. Cat D-3510
SB-2: Suits FT-230, FT-290, FT-690, etc with larger 7 pin microphone sockets. Cat D-3512

Both one price: **\$34⁹⁵** ea



HAND HELD NICADS, CHARGERS etc. FBA-5 Battery Holder

Holds 6 AA cells in standard slide-on battery pack for the FT-203, 209, 703 and 709 hand-helds. Gives 9V DC when using standard cells, 7.2V when using NiCads. Cat D-3504

\$12⁹⁵

FNB-3 10.8V/425mAh NiCad.

Similar package to above, but containing a 10.8 volt NiCad Battery. Includes provision for charging without removal from hand-held. Instant removal & connection. Cat D-3506

FNB-4 12V/500mAh NiCad.

Slightly larger to above pack, gives full 12 volts for when highest power is essential (up to 5W out on the FT-209RH!) Also includes charging provision.
Cat D-3507

\$89

PA-3 Car Charger

intended for operating 10.8 volt transceivers from a car cigar lighter socket. Includes charging as well as power. Suits FNB-3 pack as well as older (FT-208 etc) style transceivers.
Cat D-2899

\$37⁵⁰

NC-15 Quick Charger

Cradle-type charger/supply offering fast charging of either FNB-3 or FNB-4 NiCads (around 2-3 hours) with automatic charge sensing. Also doubles as handy base supply.
Cat D-3513

\$159⁰⁰

NC-9C Nicad Charger

Plug-pack type charger for FNB-3 or FNB-4 NiCads, ideal for charging battery while set is in use. Cat D-3514

\$29⁵⁰

Buy now, pay later . . .

Any of our stores will be glad to discuss easy term payments (to finance company approved applicants). Just ask!

HOME SECURITY HOME SECURITY

Alarm outputs



Reflex Horn

Large 127 x 200mm rectangular horn with huge 15 watts rating. Complete with mounting bracket, ideal for hanging under eaves etc for maximum sound dispersion.

Use in conjunction with any alarm controller offering 'speaker' output (ie any alarm controller with inbuilt siren oscillator). Alternatively use with our L-5115 electronic siren driver when operated from an alarm 'relay' output. 8 ohms impedance. Cat C-2718

\$29⁹⁵



Horn Speaker

Smaller version of C-2718 speaker, designed for use inside a horn speaker cover for maximum security installations. Plastic body means all-weather (under shelter!) operation and horn construction means incredibly high output compared to conventional speakers.

8 ohms impedance, 10 watts rating. As above, use with speaker output on alarm or optional siren driver. Cat C-2705

\$11⁹⁵



Fire Bell

Give em the gong! Fantastic noise-maker, used in conjunction with alarm 'relay' outputs. 8 inch (205mm) bell, with a massive gong inside dome (where it's harder to disable!)

Operates from any 12 volt supply (draws 300mA) - most alarm supplies are more than capable of supplying this. Try standing next to this one! Cat L-5280

\$39⁹⁵



Siren Speaker

A great alternative when your alarm hasn't got a siren output. The siren driver is actually built into the back of the speaker. So you only need to connect power (eg via the alarm's relay output) to give an ear-splitting, penetrating wail that can be heard for blocks!

It's ideal for use in cars, boats, trucks and vans, too. Mounting bracket and connecting cable supplied. Top value! Cat L-7026

\$27⁹⁵



Flashing Strobe

A new idea... and a beauty! A bright blue flashing 'strobe' lamp (like on the top of you-know-what cars!) which demands absolute attention.

Placed outside the property (say under the eaves of the house) it will instantly show neighbours, Police, etc where the alarm is occurring (it's not always easy to tell from which direction a siren or bell is coming!)

Operates from 12 volts: use in conjunction with virtually any alarm controller via 'relay' output.

BONUS: We now include a free data sheet showing how to add a 'latching' circuit to the strobe: this keeps the lamp flashing after the alarm siren, etc has stopped sounding. Very handy when you come home late at night: you're instantly warned that an alarm has occurred - something is wrong - proceed with caution! Cat L-6000

\$28⁵⁰



Local Audio Alarms

1. Large Piezo Electronic

Ideal for car, home, van alarms: this compact unit makes a very loud, piercing sound when activated. Easily fitted, operates from 12V DC @ 500mA. 110dB output at 1m. Cat L-7030

\$24⁹⁵

2. Piezo Electronic Alarm

Earsplitting siren alarm suitable for most installations. Working voltage 7.5 - 15 (200mA at 12V). Sound output 110dB at 1m. Frequency 2800Hz. Cat L-7025

\$14⁹⁵

3. Micro-Piezo Alarm

Amazingly compact! Suitable for cars, bikes, vans - or very loud local alarms. Simple installation. 12 volts operated at 120 - 240mA. Output 110dB at 1m. Cat L-7029

\$14⁹⁵

4. Two-tone Piezo

Emits a high pitched warbling sound when activated: very attention getting! And its only 38 x 22mm! 9 - 16 volts operation. Cat L-7027

\$5⁵⁰

5. Piezo Transducer

Sound transducer driven by 3 - 30V p-p AC signal around 40kHz (eg TTL, CMOS, etc). Sound output typically 80dB min. 5mm thick, 30mm diameter. Cat L-7022

\$12⁵⁰

6. Slim Piezo Alarm

Similar to above, but has inbuilt driver circuit so operates from 3-30V DC (current 2.5 - 19mA). Output 90dB min, around 3.6kHz. 14mm thick. Cat L-7024

\$3⁴⁵

7. Electronic Buzzer

Works between 4 and 15V DC. Diode protected, 70dB @ 1m output. Has low operating current and is ideal as local alarm or warning buzzer. Cat L-7009

\$2²⁵

Timer Module

A neat unit that can be added to an existing system to give an adjustable automatic turn-off. (Comply with noise pollution laws!) Features an indicator light to show alarm has been triggered - even after turn-off. Control bells, sirens, etc. Cat L-5110

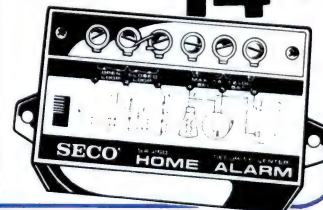
\$14⁵⁰



Siren Driver

Turns any horn speaker into a siren! Will deliver an ear-splitting 103dB @ 1m wail from a 12V supply (when used with C-2705 horn speaker). Use in conjunction with any control unit if it doesn't have siren output. Cat L-5115

\$14⁵⁰



HOME SECURITY HOME SECURITY



Appliance Alarm

What an incredibly brilliant, idea. And so simple! Protect your VCR, your stereo, your TV ... anything! Just plug them into this alarm: and if some light-fingered Louie tries to lift your loot, look out! The alarm soon suggests he change his mind! What's more, the control unit is ideal for adding any standard sensors to: making it the heart of a complete home security system. And what happens if he's a smart Alec and turns off the power first? No worries: The alarm gets him anyway!

- Handles up to 4 appliances (standard 3 pin outlets, up to 10A total)
- Provision for external siren, external key, external power
- Panic switch built in: just in case!
- Security key operated - pulling out the plug won't stop it!

Cat L-5165

Ideal for retail store security, too!

\$129



Super-low cost Surveillance System

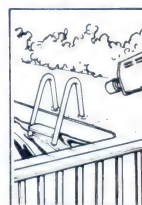
Bargain B&W TV camera for all types of security use. Door guard, area supervision, child minding, personnel checking, etc, etc. And it just plugs into any B&W (or colour!) TV set. Don't pay \$1000plus for a CCTV camera: this one is really great value and it's all you need for security work.

- 2/3 inch separate mesh vidicon Tube for high quality
- 7MHz video bandwidth, 550 lines horizontal resolution.
- Wide light range: 10,000:1 range with auto light control.
- Switchable RF/Video control (output on Aust. Channel 1.)
- High quality 16mm/f1.8 lens with standard C mount.

Ideal for monitoring swimming pools, amateur TV, schools & colleges, etc.

Cat Y-1195

\$399
at only



Warning Signs

Tell the intruder that he (or she!) isn't welcome. Tell them if they try anything they're likely to be caught by your 'constant electronic surveillance' - even if you don't have a burglar alarm fitted! (how are they to know???) We have either a self-adhesive vinyl sticker for your windows, or a large aluminium sign for the wall, gate, fence, etc. Both are a brilliant red: they can't be missed!

Window
Sticker
Cat L-5311

\$200



With inside adhesive (sticks to inside of glass) for all your windows and glass doors. Size 130 x 60mm.
Cat L-5311

Aluminium
Sign
Cat L-5312



245 x 170mm heavy duty sign, ready to warn them away in no uncertain terms. 22 gauge aluminium, screen printed in bright fire-engine red. Suitable for screwing to wall, fastening to fence, etc.
Cat L-5312

\$995

Lockalarm



Another idea that's so simple - yet so effective! Combines the features of a security chain and alarm: put the chain on the door to stop entry - if the door is pushed or forced, the alarm sounds! Fully self contained (battery operated) so it's ideal for flats, units, etc where alarm installation might prove difficult or impossible. And it can be set from outside with keys. So you can have protection when you're at home - or when you're out.
Cat L-5155

\$1395

Mugging/Rape Alarm

What a great idea! Real personal protection with this handbag or pocket sized alarm. Incredibly loud siren to scare attackers away; also includes inbuilt torch and 'door open' warning (great for hotel/motel rooms).
Cat L-5150

ONLY

\$995



Want CAR ALARMS?
You'll find them on page 54!

HOME SECURITY



The simplest security device of the lot Arlec Automatic Light

Just imagine: a prowler creeps up in the dead of night. Perhaps you're home, perhaps not. Suddenly the lights come on! Or even less dramatic: you return home and walk towards the front door in the dark. You used to trip over the kid's bikes & rollerskates. But now, as you approach the house, the front light comes on to show the way. You have been 'sensed': without lifting a finger the lights have come on: automatically! That's the Arlec Automatic Light. With dozens of applications around the home, office, factory... both in security and in normal use. They say that the most effective ideas are often the simplest: this is one of them.

The Arlec Automatic Light works in much the same way as an alarm movement sensor. Instead of triggering an alarm, it turns on a light! Anything that comes into its zone of protection will trigger it.

No electrical knowledge needed to install: it simply replaces your existing light globe! And it's ready to protect you, your family and your property. Simply brilliant!

- Fully self contained: minimal 'installation'
- Is not operated during daylight
- Microwave movement detection: fully adjustable
- For new or existing installations

\$69⁹⁵

Cat L-5160



Security Breakthrough!

A burglar alarm in your pocket...

Dick Smith Electronics, in conjunction with Voicecall Communications, will very shortly be offering a full security monitoring package for the home, small business, factory, etc.

Just imagine: a full reporting system via your normal 'phone line which will not only have automatic operator response (to your instructions), but will also call your pocket pager (Beeper, numeric or alpha-numeric) with a special tone or code. It could even warn you which sector of the alarm is affected - a fire - anything!

And the big news is this system will be a fraction of the cost of similar reporting security systems.

We expect to announce details soon: watch our press adverts for full details!

Alarm Power Supplies



ENERGY
AUTHORITY
APPROVED

3-6-9-
12V DC @ 1A

Invaluable around the home or workshop. It will give a maximum of 1 amp at 3, 6, 9 and 12 volts DC. Simply plugs into 240V AC power socket - DC connections via screw terminals on front of unit. Ideal for use with alarm systems, intercoms, etc.

- Overload protection
- Simple screw terminal connection
- High 1A output

\$22⁵⁰

ENERGY
AUTHORITY
APPROVED



3-4-5-6-7-5-9-12V
@ 300mA

An extremely versatile supply ready for just about any application. Switchable output gives 6 different voltages ranging from 3V to 12V, at up to 300mA. Complete with 5-way connector to suit almost all power sockets in common usage (including 9V battery connectors).

Cat M-9526

\$14⁹⁵

Batteries

No-leak
rechargeable



Gel Cell
12V 2.6Ah

A high current rechargeable battery ideal for alarm use. Fits perfectly into our Security Centre, also great for other alarms. Easy to keep trickle charged.

Cat S-3320

\$28⁵⁰

12V 1.2Ah
Gel Cell

Cat S-3315

As used in EA
Home Alarm

\$22⁵⁰

Eveready Dry 12V

12 volt dry cell with enough oomph to drive bells, sirens etc.

Cat S-3242



\$14⁹⁹

Cables

Light Duty Fig. 8 **20¢/m**
Cat W-2010 (2-core)... 100m or more 15¢/m

Heavy Duty Fig. 8 **40¢/m**
Cat W-2020 100m or more 30¢/m

4-Core **85¢/m**
Cat W-2100



How to put it all together

Have you been burgled yet? Then you must be one of the lucky ones. Did you know that crime against property accounts for over 75% of all major crime? If you've lost your valued possessions then there's no need to tell you how it feels. So what have we done about it? We've written this book to tell you - what you can get - how it works - how it fits together - and how you can tailor an alarm system to suit just about any budget and situation. Home, office, factory - just about anywhere! And what's more, it'll show you that just about anyone can install a professional system that would otherwise cost \$\$\$\$ more.

Cat B-6000

ONLY \$1⁹⁵

PHONES

PHONES

PHONES



CORDLESS PHONES

Talk as you walk! The cordless phone goes where you go. Around the home, office, factory, workshop; anywhere! The basic unit just plugs into the powerpoint and Telecom socket and from then on you're free to wander up to 150 metres away - and still stay in touch! With digital lock-up (so no one else can use your line) it meets with the latest Telecom requirements. Just to make it even easier, it's got memory to store up to 10 numbers! All this with last number redial and auto battery recharge (it recharges itself on the base unit) makes this one of the best value phones around. DOC Approved, Telecom permitted. Cat F-5810.

DOC App No E002/13
Telecom Permit No C82/35/113

Ultimate Convenience!
ONLY \$199

Store & dial all those frequent numbers . . .

70 MEMORY PHONE

Most push button phones give you a last number re-dial. Check this one out: in the same size as a normal modern push button phone, you get a massive 70 number memory. That's right: it will hold up to 70 of your most-used numbers - probably more than you'll dial in a month of Sundays. Push button convenience - and because it dials the number for you, it gets it right. First time. No more wrong numbers (at the price of phone calls today, that could save you a bundle!). And if the number's engaged - just one button and it will dial it again. What could be more convenient? Plug-in connection - and even has a mute button. Telecom permit pending at time of publication Cat F-5170

\$79

TELECOM DIRECT CONNECT PERMITTED

NEW FOR 85



COMPUTERISED PHONE

Take full advantage of the economic recovery by increasing your office efficiency NOW! This remarkable phone will store and automatically dial up to 80 numbers for you quickly and error-free! Think of the convenience and the money you'll save! Of course, it's also a superb push-button phone with last number re-dial.

- 80 Telephone number memory storage.
- programmable security lock for STD/ISD barring.
- Access pause for PABX.
- Ringer ON/OFF switch.
- Last number re-dial.
- Re-dial number transferable to memory.
- Mute switch for privacy.
- Push-button dialling.
- Essential for the busy office - even for the home!
- No more costly wrong numbers!

Cat F-5165

\$99

Telecom Permit
No. C83/33/108

15m CORD

Just plug it in and the phone can move around the room!

Cat F-5103



\$16⁹⁵

10m CORD

A little shorter . . .
a little cheaper!

Cat F-5115



\$12⁹⁵

PHONES PHONES PHONES



CLOCK RADIO

The ultimate convenience for your desk or bedside table. Imagine the clutter of having a separate alarm clock, radio AND telephone. You'd hardly have room to rest a pencil, much less anything else! Now we have this superb AM/FM radio, clock and telephone, ALL in one unit! And they're both packed with features. The AM/FM radio features sleep shut-off function, alarm indicator, snooze switch, auto radio shut-off while telephone is in use, wake to music or alarm modes, large LED display and anything else they're able to squeeze into this compact case. The telephone is just packed with features so those unexpected early morning calls can be as easy as possible. Push-button dialling with last number redial, ringer ON/OFF switch for when you don't wish to be disturbed. Mute button to prevent the other party from hearing a conversation on your side (but you can still hear them). All this, space saving and great value as well! Cat F-5108

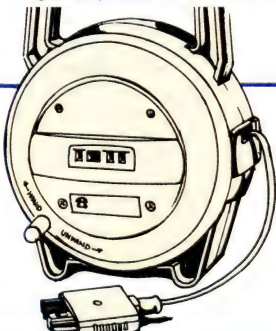
Only **\$49⁹⁵**



Thunderstorms

The telephone, in common with household electrical appliances, can be a source of electric and acoustic shock during thunderstorms:

- Use your telephone only for calls of the utmost urgency. Keep these calls brief.
- Whilst using your telephone keep clear of electrical appliances and metal fixtures such as stoves, air conditioners, refrigerators, window frames and sinks.



EXTENSION CORD

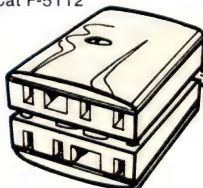
- Gives an extra 15 metres distance from telephone wall socket.
- Simple plug in design.
- Easy to rewind for storage when not in use.

Cat F-5101

\$22⁵⁰

TELEPHONE DOUBLE ADAPTOR

Now you can plug two phones in, or a phone and an answering machine! Cat F-5112



\$14⁹⁵

THE DSE PAL PHONE

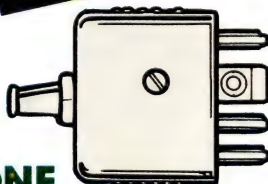
The one with the friendly price

Remember when cheap telephones sounded 'tinny' and weighed a ton? Now the Pal Phone is here with new state-of-the-art technology. Elegantly styled and incorporating many of the superb features of its big brother, the 12 memory Automatic Phone, you'd expect to pay lots more for a phone this good.

- Push-button dialling.
- One button last number re-dial.
- Mute button for privacy.
- Ringer ON/OFF switch.

Cat F-5188
Telecom Permit No. C83/30/31

\$29⁹⁵



PHONE PLUG

Standard replacement phone plug to suit Australian system. No solder connections. Cat P-5700

\$4⁵⁰



TELEPHONE ANSWERING MACHINE

Think of the number of times you've just missed a phone call ... you couldn't get to the phone fast enough, or it didn't ring long enough. Think of the number of times you miss out on calls because you're not there to answer them ...

A telephone answering machine solves the problem. Once very expensive and only a proposition for businesses, etc. Dick Smith Electronics has slashed the price to place a phone answering machine within everyone's reach - even for the home.

And the best part is you can simply plug them in to any existing Telecom socket - it's easy and it's fully legal. And there's no Telecom connection fee to pay either (for existing sockets).

Dick Smith Electronics:
Your Alternative Telephone Company!

SINGLE TAPE ANSWERING MACHINE

Imagine an economy single tape telephone answering machine with more advanced features than most dual tape machines! This fantastic machine has got to be the simplest of all to use ... in fact, the solid state microprocessor circuitry is actually activated by the slide of one button. Revolutionary VOX (voice activated) remote control - no costly beepers required. Voice activated message time means more messages per tape and no wasted space. Unbelievable value!

- Microprocessor controlled for reliability.
- Monitor mode (listen to incoming calls!)
- VOX (voice activated) message time - up to 60 sec. each.
- VOX (voice activated) remote control.
- Uses standard cassettes.

Telecom Permit No. C83/16/48

TELECOM
DIRECT CONNECT
PERMITTED

IT'S LEGAL!

You've probably heard much about so-called 'illegal telephones' and probably have been thoroughly confused by all the mumbo jumbo the media has put out on the matter. Well, here are the facts.

Last year the Davidson inquiry recommended that the Australian communications system be freed to allow private enterprise a share of the business. Telecom went along with the recommendation and it is now absolutely legal to attach any 'Telecom Permitted' phone to their telephone lines.

ALL DSE telephones in this catalogue are Telecom Permitted and the appropriate permit numbers appear in the product descriptions on these pages.

As exciting new top quality telephones are added to our range continuously, in all probability your DSE store will have an even greater range than was available at catalogue printing time. Dick Smith Electronics: Your Alternative Telephone Company.

\$199

Cat F-6130

1000'S
SOLD!



TAPES FOR ANSWERING MACHINES

Standard C-90 Cassettes: Cat C-3354
Mini Cassettes (suit F-6135): Cat C-3360
Callmaster (F-6136) Cassettes are available as a spare part from our Service Dept.

Voice Activated Deluxe

Two Tape Answering Machine

They said it couldn't be done... but we've actually improved on our popular original two tape answering machine which has sold thousands over the past few years. This new model, incorporating absolutely the latest state-of-the-art design, stands head and shoulders above any other one or two tape machines available at any price!

STOP PRESS... Now no costly remote control beeper is necessary! latest space-age techniques have eliminated the need for bulky, expensive battery-operated remote control beepers. Using a pre-determined vocal command, which YOU code into the machine, it is incredibly easy for you (and only you) to retrieve your messages whilst away from your phone, interstate or even overseas. Code is easily changed for security.

Check These Deluxe Features... No other unit compares!

- Microprocessor controlled for reliability.

- Max. 3 minute announcement.
- Monitor mode - hear who's calling.
- Power failure security - resumes working when power returns.
- Fail Safe - tells you if something is wrong.
- Record over existing messages or auto electronic erase for security.
- VOX (voice activated) announcement change - to alter your outgoing announcement as often as necessary - remotely!
- Easily changeable security coding for remote operation.
- Answer only mode or answer & record mode.
- Command confirmation - no guessing if unit has received instructions.
- Space Saver - minimum space between messages.
- Uses standard mini cassettes.

Cat F-6135

Telecom Permit No. C83/16/12



Beeper Activated Budget

Dual tape Answering Machine

Want the flexibility of a dual tape telephone answering machine without paying through the proverbial proboscis? This top quality answering machine doesn't have all the features of the one at left... but it has a much lower price! Features dual tapes for convenience, remote beeper for message retrieval from any other phone (anywhere in the world!) and much, much more. Great machine? You bet! Great price? Try beating it!

Features:

- Complete with remote beeper to retrieve messages.
- Monitor mode lets you know who's calling.
- Takes up to 100 incoming messages.
- Outgoing message can vary between 12-60 seconds.
- Built-in microphone.

Cat F-6136

Telecom Permit No. C83/16/18



And when you're home but can't answer the phone...

Now you can: with the Loo Phone.

The ultimate in convenience convenience!

Maybe it's a manifestation of Murphy's Law. The phone always rings when you're otherwise engaged. And hurry as you might, by the time you reach the darned thing... it stops.

Now there's the perfect solution: a phone for the throne room that's much, much more than just a phone.

For a start, it is a phone. And Telecom permitted, too. Ready to plug in and use (ok, so you haven't got a socket in the loo? Try one of our phone extension cords and perhaps a phone double adaptor!) Full push-button operation, with last number re-dial. Yes, some people do make calls with them. "What'ya doing" takes on a whole new meaning!

Second, it's an AM/FM radio. While away the hours (minutes) - sure beats reading magazines. Great for catching up on the news early in the morning, too. Battery operated - no worries about lack of power points close by!

Third, it holds the most important item in the house. And you can choose pastel print or plain!

Yes, we agree it IS absolutely tasteless. But isn't it incredibly useful! And your loo will certainly be one of the most talked about... and, dare we say it: talked to... in the street.

The Loo Phone. Exclusive to Dick Smith Electronics (who else would be game to sell a product like this?)

Cat F-5120



ONLY
\$49
FOR ALL THIS



INTERCOMS INTERCOMS INT



New From Arlec . . . 2 Station Wireless Intercom

No wiring! Just plug into the power point and you're ready to keep in touch anywhere in the home, office . . . anywhere there's a main socket!
*On the same phase

High efficiency FM system for crisp, clear sound: and because it uses the mains wiring already in the building, you don't have to install a thing!

Complete with transmit lock switch so you can monitor nursery, sick room, etc. Great value: and the system can be extended to take up to four units!
Cat F-1011

Intercom Power Supply 3-6-9-12V DC @ 1 amp

Most intercoms without mains supply operate from between 6 and 12 volts at up to 1 amp. The DSE Powerpack supply delivers between 3 and 12 volts (switch selectable) at up to 1A DC. Perfect! Screw-type connections.
Cat M-9530

- Overload protection
- Simple screw terminal connection
- High 1A output

\$22⁵⁰



The Babysitter: Wireless Monitoring System

Here's value: a communication system intended for monitoring purposes! From its name, the intended application is obvious. But it's much more: use it as a security monitor (has both visual and audio output) as well as a one-way intercom. Includes a sensitivity control to adjust minimum threshold of detection (eg won't be upset by traffic noise!) and has both automatic and manual operation modes. The Babysitter Alarm even works across different phases (unlike most other wireless intercoms) so it's ideal for the office or factory where phases may not necessarily be known.
Cat F-1018

\$89⁹⁵

\$89⁵⁰

Intercom Cable

12 core cable suitable for wiring multi-station intercoms. As used by Telecom in phone wiring. Colour-coded insulation.
Cat W-2140

\$1⁴⁰ metre



Myphone Phonestyle Intercom

Up to 7 master stations

For fast, efficient communication it's hard to beat this mighty Myphone System. With push button dialling and phonestyle handset, they're ideal for homes, offices, factories - even motels, private hospitals, etc. You can have between two and seven stations in the system - all masters - and on a seven station system three simultaneous conversations are possible in privacy.
Cat. F1310

System Requirements
Cable - Number of stations plus two wires, e.g. 5 station system, (each station \$89.95) 7 wires.
Power - 12V 350mA (Our M9530 is ideal).

\$99⁰⁰
each station
5 up price
\$80.00 each



Two Station System

A highly efficient 2 station intercom that is fully transistorised and can be used over any distance up to 160 metres. Master unit has volume control and is supplied complete with slave and 16 metres of connecting cable. Either station can call even if the system is turned off. Can be used in any situation, even as a baby minder between bedroom and lounge.
Cat. F1020

**PAIR
ONLY \$19⁹⁵**



Four Station Intercom System

Do you have problems communicating from one end of your house to another? Or your office, factory, etc? Now is the time to put in a quality Dick Smith intercom unit - and save your voice! This intercom system is easy to install, easy to use - and easy on the pocket! This four station intercom system is fully transistorised and comprises a master and three slaves. Each slave station has 16 metres of wire plus they can be wall mounted or placed on a bench or desk etc. This system is battery powered and even when the master is turned off the slaves can still call back to the master simply by pressing the call button. There is no need to press the button on a slave when talking to the master - they are 'hands free'. This is the way to communicate between bedroom and kitchen, garage to kitchen, etc.
Cat. F1040

**Complete
for only
\$34⁵⁰**

Intercom Terminal Board

Makes wiring the above system easy, ENSURES COMPLETE PRIVACY. Can be mounted anywhere, near power supply is ideal (includes terminations).
Cat F-1321

\$89⁹⁵

ERCOMS INTERCOMS

Two station phone-type wireless intercom

Full duplex operation: two-way conversation without pushing buttons.

Looks fantastic... works even better! That's the all-new Dick Smith two station wireless intercom. Many people are much more comfortable using a 'phone' type handset; they're also much better in noisy environments.

All you do is simply plug in the units into any two power points of the same phase (eg. almost all houses, most offices - and in large buildings it's not difficult to find the same phase!)

- Two-way conversation without pushing buttons.
- Fully automatic - lift the handset and the other station is automatically beeped.
- Use them as babysitters - listen in to other end.
- Cradle can be either wall or desk mounted.
- Complete with rubber pads to prevent scratching.

NEW FOR 85



\$109

PAIR
Cat F-1015

Motorcycle Intercom

Tired of tapping on helmets? Throat sore from screaming? Or do you settle for riding in isolation? Now you can have the freedom of the bike and freedom of speech at the same time! The motorcycle intercom allows you to talk to your passenger just like you can in a car. Designed to fit into your helmet the earpiece/mic fits snugly to your head. Needs no switching - so your hands are free to hold on. Comes complete with 2 earpiece/mics, plugs, leads, and an amplifier incorporating volume control and belt clip. Fantastic value and it'll keep you in contact! Cat F-1000

\$59⁵⁰

Myphone multi station intercoms

... the most versatile intercom systems around!

What a system! YOU choose the type of intercom YOU want - just by various combinations of intercom types.

The master station is the Myphone TC-5M, with add-on stations either other TC-5M's, TC-PR slaves or the TD-1A doorphone.

You can make anything from a simple two station master/slave system up to a five master station or even an eight station master/slave combination. Now that's Myphone versatility!

Cabling is quite simple, with even the most demanding installations needing no more than our 12-conductors than the total number of master stations (eg a five master system requires nine conductors).

The system can be battery operated, or can be run from the mains via one of our plug-pack adaptors (M-9530 is ideal).

Where industrial or office intercoms are required with more than 5 master stations, we suggest you approach a professional intercom installation organisation, as intercoms of this complexity are not a proposition for the hobbyist.



TD-1A

Doorphone

The Doorphone can replace either a TC-PR slave or a TC-5M master to give a great security feature in your system: you can find out who's at the door without opening it. And the TD-1A features a different tone from the other intercom calls so you know it's the door. Cat F-1200

\$19⁹⁵

TCPR Slaves

When a master/slave system is required use up to 4 TCPRs with one TC-5M. Any slave can call the master and vice versa, but cannot call another slave. Slaves include privacy button to prevent eavesdropping by the master. Cat F-1201

\$24⁵⁰

TC-5M Masters

Use between three and five of these in an 'all master' system, or a single unit as the master station in a 'master/slave' system... or whatever number you require in a combination system. Cat F-1240

\$84⁵⁰

RADIO CONTROL



At last! Competition class radio control models from Dick Smith Electronics

Tamiya Pajero 4WD build-it-yourself kit

You've asked us for competition class for a long time. Here it is: a superb kit from the world's leading manufacturer precision moulded to make assembly so simple: yet so true to the real thing. It's a beauty; and boy it performs!

Features: ● Large resin front bumper for proper shock absorption ● Front swing axle suspension ● Semi-pneumatic rubber like tyres for excellent grip ● Takes Tamiya Ni-cad battery for long action!

Includes all components, transfers, motor & wiring. Does not include radio control unit or batteries.



7.2V Ni-Cad

Genuine Tamiya battery for extra action. A must for the competition user. Cat S-3325

\$119

12V Charging Leads.

Allows quick charging of the 7.2V NiCad from a car battery

\$9.95



And competition class radio control, too . . .

No worries with these digital proportional radio control units: they've been checked out by the leading radio control clubs and found to be A-1! No problems with interference or crosstalk. If you've had problems with other radio control units, try these: you won't be disappointed.

And because there are two models to choose from, you can use them for all models: the 29MHz AM for cars, boats and other models, and the 36MHz FM for competition class planes, boats, helicopters, etc.

3 channel AM . . . 29MHz band.

The complete system, especially made for cars, boats & gliders (they only require 2 servos: why pay more?) but is also perfectly suitable for aircraft (extra servos available). On the clean 29MHz band - far from the maddening crowd on 27MHz! True digital proportional operation.

- 3 channel system capacity: two channels with trim
- Includes transmitter, receiver, 2 servos, servo trays, battery holder and all fittings

Cat Y-1235

\$110

5 channel FM . . . 36MHz band

Competition class for competition class models. Serious modellers - the ones with the expensive toys - always use FM. It's considered the 'professional' band. 5 channel system capacity with four digital proportional and one on/off (bomb bay doors, undercarriages, etc). And the FM receiver uses 30% less power: a real advantage!

- 3 servos supplied (most aircraft use only 3)
- Everything included, right down to screws, servo horns, cables, etc
- Use for those models where quality counts: planes, helicopters, etc

Cat Y-1245

\$220

SPARE SERVOS

Suit either of above radio control units: use to expand system to maximum capacity, or to replace when you prang the plane! Standard 43.6 x 21.5 x 39.5mm size, weighs only 42.5g with full plus/minus 45 degree operating angle.

Cat Y-1246

\$22.50

Check these for value! Radio Controlled Cars . . . INCLUDING the radio control!



4WD Cheetah

Climbs up hills like a mountain goat!

Features include a durable plastic body with fine detailing like off road tyres, stone guard, illuminating head lights and much more. 4 wheels are driven, giving a 40 degree incline climbing capacity. Even has two differential gears for smooth cornering. Includes radio control unit with up to 50m range.

Cat Y-2515

\$79.95



4WD Nissan Safari

Goes anywhere - just like the real thing!

Similar to the Cheetah - so you can buy both and let the kids have a ball racing them. (The kids? If they get a chance!!)

Also has incredible detailing, 35 degree climbing ability and comes with radio control unit.

Cat Y-2516

\$79.95



Turbo Porsche Racer

And if you've always wanted to own a Porsche . . .

Here's the closest you'll probably get! Fire-engine red Porsche Turbo, accurate scale model (1/13) of the real thing. Lights, too - and two channel radio control gives you full directional control - forward and reverse. Radio control includes trim controls, too. Quality Japanese made

Cat Y-2514

\$99

GAMES & LEISURE

Test your Skill . . . beat the Master!



Dress up your bike: fun & safety. The Bicycle Computer

Now you can monitor your bike riding just like luxury cars and their car computers! This incredible high precision bicycle computer is a useful and fun accessory for the pleasure rider, serious competitor or exercise enthusiast. Display shows you:

- Current speed ● Average speed
- Maximum speed ● Total distance travelled
- Distance travelled since last reset ● Stopwatch for elapsed time in hours, minutes, seconds plus scans distance, speed and elapsed time.

Cat Y-3010

Suits any bike with standard spokes.



\$55

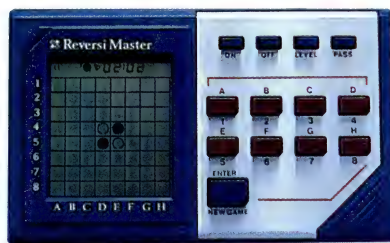
The Bika-Lite safety wand

Here's top value for any kid from 6 to 66 with a push-bike. The Bika-Lite is a flexible acrylic wand that glows; and that means they can be seen from afar - a must in today's traffic.

It lights up at night (the whole wand glows) and the day-glow flag means it can be seen during the day. Includes fittings for all cycles and fitting instructions. Cat Y-3020



\$9.95

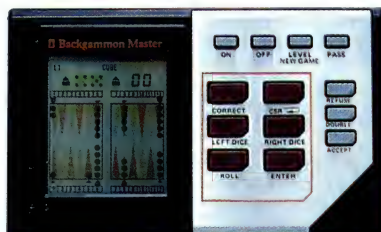


Reversi Master

Sounds easy: just try it. And you'll be hooked. Based on the old Japanese board game of 'Go', you must try to fill the board with your coloured men before the computer can. And just when you think you've got it won . . . Two levels of computer play - or manual mode so you can play it with a friend. And there are no pieces to lose! Cat Y-1017

\$5.00 less than last catalogue price!

HOURS OF FUN! \$34



Backgammon Master

The travelling backgammon game to beat them all. Has all the right rules of play - even the doubling cube - and it's a great aid to learning this exciting game, too. And the best part about it: you can actually beat the computer. It plays just like a person (not some super brain) so you aren't frustrated by losing all the time! Cat Y-1015

REAL BACKGAMMON FOR ONLY \$39



Count your savings Computabank - The Electronic Money Box

Imagine! A moneybox that actually counts the coins - in each denomination - as you put them in - and displays the total in the box! Yes, it can recognise individual coins and add them to the total - so you know exactly how much money you've saved. Beats the old piggy bank any time! Cat Y-5050

NEW FOR 85 \$28.50



Checker Master

One of the world's most popular games (ok, so we call it draughts). Now you can match wits with the computer (or play with a friend) and see who gets who! Small enough to fit in the pocket: ideal for travelling! Cat Y-1016

FANTASTIC VALUE! \$34



And now CHESS!

It's taken a long time: but the wait was worth it. Until now, chess games have been a joke - either cheating, playing at a grand idiot level or even not knowing the rules. Now we have a 'Master' series game which solves all the problems. It knows the rules, it knows various levels of play - and it knows how to Castle.

If you're a beginner, it will help you learn. If you're a good player, it will help you be a better player. Cat Y-1018

QUALITY \$49



Hey! Any budding Beethovens, Bachs or Beatles out there?

Find out with these superb organs from Casio. Top brand, top performers: they'll bring out the musician in anyone! Two models to choose from:

Casiotone MT35 Organ

4½ octaves with rhythm and chord accompaniments, loads of voices and special effects - even a built-in demo tune! Cat Y-7035

\$159

Casiotone MT11 Organ

3½ octaves and eight different voices plus vibrato and sustain. Cat Y-7011

\$79.95

SOMETHING DIFFERENT...



Negative Ion Generators

You know what it's like deep in the forest... or after a sudden shower of rain. Everything smells so fresh, so invigorating!

You're breathing in negative ions, which abound in such locations.

The trouble with living in our polluted cities is there tends to be an excess of positive ions. And, while it cannot be conclusively proven (yet!), medical authorities believe positive ions are responsible for a whole range of maladies - from a feeling of lethargy to hay fever, catarrh, allergies, etc. Negative ion generators manufacture negative ions to counter the imbalance. And the results are often amazing: from a lessening of symptoms to complete relief, users of negative ion generators swear by them.

They also help clear the air of dust, pollen and smoke particles, so all in all, they're incredibly beneficial.

Choose from one of these three models:

12V model: Aironic 203

Intended for car use, where many users report lessening or eliminating car sickness symptoms. Plugs into the car cigarette lighter socket (also stops people using the lighter - more benefit!) Cat Y-9002

\$69

240V model: Aironic 202

Plugs into power point, but uses so little power it won't even turn the meter. Complete with stand as shown. Cat Y-9000

\$69

Portable model:

Aironic 210 Cat Y-9003

Battery operated, take-with-you type. Ideal for travellers: you can use it in the hotel room, while in planes, cars, etc. Can also be used as home/office model. (Not illustrated: virtually identical to Model 203).

Includes mains battery charger.

\$139



Breath Analyser

Why take the chance? If you've had a couple, wouldn't it be nice to know you're going to make it home - even if you're stopped and asked for a few breaths!

Our Breath Tester actually measures breath for alcohol level, with graduated 0.05% reading (most states now 0.05%). Keep one in the glovebox and be sure!

Battery operated, uses alcohol sensor similar to those used by Police Breath Testing Units. Complete with full instructions for easy operation.

Note: not a legal check. No liability for readings given! Cat Y-4000

NEW FOR 85

\$79.95



Bug Killer

Despatch those pesky little biteys to that great bug home in the sky! Blue fluoro tube attracts mozzies, moths, flies and other annoying insect pests. One minor problem: just before they get to the blue flash there's an electrical grid. One flash and they're ash! But it's safe: the plastic case has slots big enough to let the insects through, but not big enough for pinkies (even the babies!) So you won't suffer a similar fate to the insects.

Hang one outside and keep 'em out there. But dead. Or use inside to stop the midnight feast (mozzies feasting on you, that is). Also great for camping out (especially with the 12V model!)

240V Model: Simply plug into power point

Cat Y-8900

\$29.95

12V Model: Complete with car cigarette lighter plug and 3m lead.

Cat Y-8902

\$24.95

FUN CORNER

Little Dicks own

"WIZZ" Cap

Now you too can be a Wizz... just like Little Dick. One size fits all. Cat Y-9950

ONLY \$3.95



CALLING ALL LITTLE DICK FANS!



Little Dick Fan Club Badges

Show your friends you're a Little Dick fan. Wizzo!

Cat Y-9951

ONLY 50¢

For the Intelligentsia...

Irish Calculator

Guaranteed never to run out of batteries. The ideal gift for the person who has everything: it's absolutely imperfect for addition, multiplication, subtraction and um er what's the other one? Cat Y-2900

ONLY 95¢



Yuri Geller wouldn't believe this!

Miracle Spoon

It is a miracle! Space-age memory superalloy pops back into shape when you place it in hot water: bend it into any shape and then pop into your coffee!

It's a great way to demonstrate this new material: teachers, students, etc love them!

Now if only they could make a car body out of this stuff...

Cat Y-6000

ONLY \$9.95



... NEW & INTERESTING



High-output Solar Panel

Calling all boat owners. Amateur operators. Technicians. And anyone else who's ever had to keep a 12V battery charged in an out-of-the-way place: Here's the first solar cell we've seen that combines both usable output AND reasonable cost. We've seen similar panels to these advertised elsewhere for \$100 more! A twin panel with two cells giving 10 volts at 450mA (in direct sunlight). So you get the choice of 20 volts at 450mA or 10 volts at 900mA! Ideal for trickle charging a car battery - and it's complete with a blocking diode so it won't discharge the battery at night (also protects against inadvertent polarity reversal).

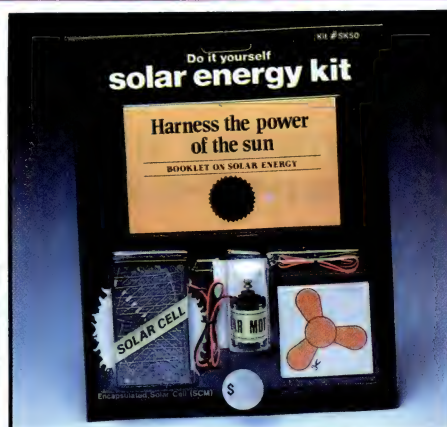
Just think: once you've bought one of these, all your power comes free - courtesy of Old Sol!

- 2 x 10V at 450mA (20V at 450mA or 10V at 900mA)
- Diode protected.

DON'T PAY
\$100 MORE

\$219

Cat Z-4845



Solar Energy Windmill Kit

Fantastic educational kit! Harness the power of the sun: put its energy to work for you. Kit includes a solar cell to convert sun's rays into electricity, a mini electric motor, 'propellor' to cut out and mount on the motor, wiring, etc, plus a fantastic little booklet 'Harness the power of the sun' showing experiments, etc for you to do.

Great for school projects: even the big kids can learn from this one. You actually get 'free' energy from the sun and learn how to put it to practical use. Assembly will give hours of pleasure and it's very educational.

Cat Y-2100

★

NEW FOR 85

Only **\$11.50**

Halley's Comet returns Nov 85
through April 86!



Astronomical Telescope

For the avid star gazer or would be astronaut: this fantastic telescope with 50mm lens and focal length of f equals 650mm. Great for watching the in-law fly past the full moon! Complete with sturdy metal tripod, angle indicator and position-locking screws. The accurate rack and pinion focus adjustment allows smooth one handed operation. Ideal gift!

Cat Y-1090

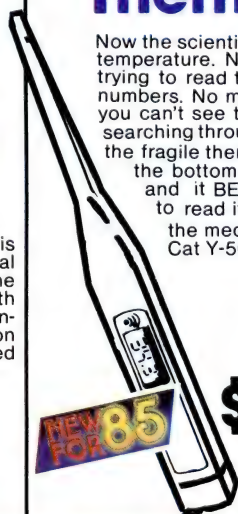
Only **\$49.95**

Complete with Tripod!

Digital Clinical Thermometer

Now the scientific, accurate way of taking temperature. No more strained eyes trying to read those impossible little numbers. No more false alarms because you can't see the thing properly. No more searching through cupboards only to find the fragile thermometer lying broken on the bottom shelf. Highly accurate and it BEEPS at you when it's time to read it. LCD Display. A must for the medical kit.

Cat Y-5000



Only

\$11.50

Super Sensitive metal locator

How often have you had to find a nail, pipe or wire in a wall? This little beauty will do just that without holes! Has sensitivity control that can be adjusted for the smallest nail or largest RSJ. Indicator light comes on when in the presence of metal. Operates from a single 9V battery. Ideal for tradesmen handymen, etc!

Cat Y-1060

Only **\$12.50**



CLOCKS & TIMERS

Keep right on time with DSE!

Know the time:
anywhere!

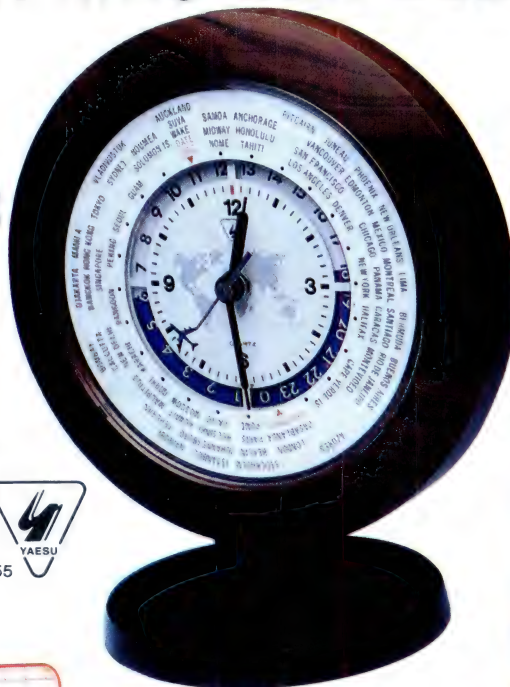
24 Hour Quartz World Clock

Ham Radio Operators need to know the time anywhere in the world (it's no use calling Boris in Vladivostok if he's asleep!). They find out with the Yaesu Ham Clock. It tells at a glance what the time is anywhere. Businessmen find it just as valuable (if you do business overseas you'll know what we mean!) Operates on one 'C' size battery - lasts around a year or so!

Top quality... **\$59⁵⁰**

And it's just

Cat Y-1055



Clock with alarm & Thermometer

Mini LCD alarm clock also shows temperature at a glance! Ideal for the desk, complete with hinged stand to support upright on desk. Your choice of 12 or 24 hour modes and degrees C or F. A back light is provided for night use and a velvet-type sleeve for protection. Cat Y-1045

\$27⁵⁰



BATTERIES

Now you can
get your watch
clock batteries
at a low
cost!

EQUIVALENT GUIDE

		JIS	Eveready	Mallory	Hi Watt
Cat S-3292	\$2.95	G10	389	10L12	S-120
Cat S-3293	\$3.95	G13	S76	10L14	S-200
			303		
			357		
Cat S-3295	\$2.95	G12	386	10L24	S-150
			S41		
Cat S-3296	\$2.10	G8	391	10L130	-
Cat S-3299	\$2.00	G3	392	10L125	S3-140
			S312		

For the sports fan

LCD Clock/ Stopwatch

A handy Stopwatch/Clock that comes complete with lanyard for hanging around the neck. When used like this the unit will be the right way around for timing sports events etc. Quartz controlled for accuracy, the large liquid crystal display is very easy to read. Use it as a clock, or at the press of a button use it as a Stopwatch. And it makes a fantastic timer for yacht race starts, too. Finished in rugged black plastic for maximum life under harsh UV light outdoors. Cat Y-1041

\$28⁵⁰



Pen Watch slimline, low priced

A superbly styled ball-point pen complete with an LCD digital clock right inside the pen. Great for those who don't like to wear watches. The clock shows day, date and seconds. The pen has a retractable nib and works just like you'd expect a pen to work. An ideal gift for a friend or treat yourself.

And it uses standard
Parker refills!

\$4⁹⁵

Cat Y-1030

Replacement battery: Cat S-3299(G-3)



Computer Desk Clock

The perfect gift for the computer nut (and anyone else!) Mini LCD clock in the shape of a computer & monitor. Accurate quartz clock, battery operated (lasts for donkey's years!) Cat Y-1039

\$4⁹⁵



AS
ON
TV!

"KEYFINDER" Electronic Keyring!

You've seen it on TV: here it is! If you're one who loses your keys often (don't lie!) it's just the greatest thing since sliced bread. Just whistle - and your keys beep back at you! Designed for attaching to your keys.

Cat Y-1070

ONLY **\$15⁹⁵**

Make your mailbox your own Dick Smith Electronics branch

LIGHTS & TORCHES



NEW FOR 85

Dynalite 4 in 1 Fluro lamp, super value!

A fluoro lamp. A Spotlight. A Bliker. And a car trouble light. All in one handy pack! Works from internal batteries (6 x 'D' cells - not supplied) or plug it into the car cigarette lighter (lead supplied). A must for the motorist, camper, fisherman etc. Great value. Size 285 x 100 x 75mm.

Cat Y-1086

\$19⁹⁵

NEW FOR 85



Hand-held Spotlamp

Tiny Angel 2 in 1 Quartz Halogen Power! pocket lamp

Here's fantastic light output: quartz halogen power for general purpose spotlamping. A super-bright 55 watt quartz-halogen bulb (replaceable) in a sturdy PVC protective case, complete with hand grip. Cigarette lighter plug and cable included.

Cat Y-1084

Tiny - but very handy! 6 watt fluoro lamp with spotlight, too. Small enough to pack anywhere. Comes complete with hand strap. Size 185mm long x 45mm rectangular.

Cat Y-1087

\$9⁹⁵ Only \$12⁹⁵



FOREVER LIGHT

NEW FOR 85

Everyone who sees this is amazed! Solar cells keep rechargeable cells topped up. Squeeze the case and a high brightness yellow LED lights! Gives more than enough light to find a keyhole, etc. And it comes complete with keychain.

Bright.

Cat Y-1075

\$19⁹⁵

EVEREADY HAND-HELD STROBE

Bright xenon flash in waterproof case gives very high visibility. Ideal as a general purpose warning beacon, just a fraction of the normal retail price. We purchased a huge quantity: you reap the benefit!

Cat Y-1085

\$9⁹⁵



FLUORO CAR/CAMPING LIGHT

Attractive woodgrain-finish end plates and translucent diffuser make this fluoro car/caravan/camping light a must for the traveller.

Specially made to suit negative or positive earth 12V systems, complete with a 2m cable and cigarette lighter plug.

Cat Y-1082

\$12⁹⁰ Only



NEW FOR 85



Scope Light

Mini magnifying glass with inbuilt lamp for throwing a little light on the subject. 10 times magnification - ideal for examining pcb's, components, stamps, general hobby work, etc etc. Takes single 'AA' battery; complete with lanyard.

Only

\$11⁹⁵

Cat Y-1080

PERSONAL ELECTRONICS PER

Take 'em anywhere!

Mini Tape Recorder/notetaker

Today's business person on the move hasn't time to sit down and write letters . . . or even spend time dictating them to a secretary!

Thank goodness someone invented the tape recorder! Now you can record letters, notes, messages . . . anything, anytime, anywhere. Going to work in the car. At home. Sitting in a plane. Today's mini tape recorders are made for the purpose: so small, so convenient - and so reliable. And it's not just business people who benefit; students take verbal notes. Writers planning their next epic. Travellers recording foreign adventures. And so on.

Choose from the models shown here: there's one for every purpose!

Micro Cassette Transcriber



A system like this used to cost a fortune! Some of the 'big names' still do! Why pay hundreds of dollars more and do no better . . .

It's a complete transcription package: a quality micro cassette player, with all the features the busy secretary needs: two speeds, so it's capable of playing tapes made on most micro cassette recorders (even has a plus/minus 15% speed variation control plus a head azimuth adjustment control to take into account some shonky recorders!)

Plus it has a foot control to give both forward and reverse direction control, PLUS a quality magnetic earpiece which plugs into the stethoscope type ear fittings, also supplied. All this AND a 240 volt to 12 volt adaptor, included in the low, low price!

You'd expect to pay \$\$\$ more for a unit like this in a 'big brand' name. Compare the quality of this superb set: and you'll wonder how we do it at the price!

Features:

- 30 minutes playing time with MC-30 tape; 60 minutes in 'low speed' position.
- Continuously variable speed control giving plus/minus 15% variation.
- 3 digit tape counter to keep track of your position.
- 12 volt operated (240 volt mains adaptor included).
- Includes stethoscope phones, foot pedal & instructions.

Cat A-4043

\$199



\$69

2 speed MICRO CASSETTE RECORDER

Small enough to take anywhere: large enough for all your notes, letters, memos, etc etc.

The Micro Pal Micro Cassette offers two speed recording - 2.4cm per second normal speed and 1.2cm per second half speed. You'll find that half speed is perfectly adequate for speech - and your tapes last twice as long.

Operates from two 'AA' batteries (not supplied) or optional 3V DC Adaptor. (Cat M-9525 is ideal). Supplied complete with a vinyl protective wallet and carry cord. Size just 125 x 65 x 30mm. Cat A-4041

Micro cassette to suit: 15 minutes per side.

Cat C-3361 **\$4.50 ea**



\$79

MICRO CASSETTE RECORDER/NOTE TAKER

Ideal for taking those personal notes, inventories and dictation. The controls and microphone placement permits recording while carrying in your shirt pocket!

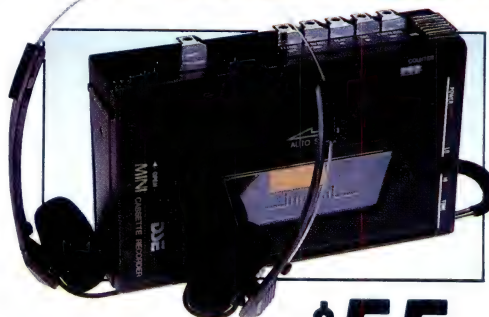
The micro cassette notetaker offers three jacks (earphone, foot switch, and AC adaptor) for added convenience when used for dictation and stenography. One touch record button makes recording simple. Pause button for added control and convenience.

Supplied complete with batteries (3 penlight) carry strap and 30 minute tape. It's only 67 x 143 x 25mm and at 230g it won't weigh you down! Cat A-4042

Spare Cassettes to suit:

Cat C-3360 **\$3.80**

DSE STEREO CASSETTE DICTATOR



\$55

Here's a neat idea: a dual purpose cassette player/recorder that's just as much at home playing stereo cassettes as it is being used for dictation and other general purpose mono work!

It has an inbuilt microphone and speaker for mono recording and playback . . . or you can pop in the stereo headphones (supplied) for either stereo or mono.

And the best part is it uses standard (cheap!) audio cassettes, giving you up to 120 minutes recording (depending on type of cassette used).

Plus, for dictation work, it features a fast forward/cue as well as a rewind/review button, plus pause control. All this in a protective case - ready to handle the rough work as well as the play!

Cat A-4051

Have you got the message yet?

For people on the move, radio pagers are the most efficient and reliable way of staying in touch.

And now: Second Generation Pagers!

National Digital (Numeric) Pager

Even better than a tone (such as Beeper) is a digital (numeric) pager. With it, you can see which number you have to dial. Or, through a system of pre-arranged codes, a message.

The new National numeric pager does just that: with its 20 digit LCD message (12 plus 8 by line scrolling) it's ready for even the busiest sales rep, the most in demand executive . . . and it even works from your home security alarm too!

Features 8 memories: stores the 4 latest 20-digit messages plus four tone calls. And if you're busy and can't be interrupted, it will store them for later replay.

And a unique feature is the service area indicator: you'll know if you're outside the range - it tells you so. Rugged, reliable - and energy efficient (single AA alkaline lasts over two months!)

And the cost? Much, much less than you'd expect. Once purchased (yes, you own this pager outright too: no costly rental!) and you pay the once-only low connection fee, the service charge for the numeric pager is just \$18.00 per month.

Or the top-of-the-line:

Full Alpha-Numeric Display!

No more phoning back for that important message: it gets to you immediately!

The very latest in pagers from National, (slightly ahead of our time) this one is everything you could ever want. It has a staggering storage capacity of 1200 characters - up to 400 characters per message or 20 individual messages! So several messages can be automatically stored for later reference and action. And if a message is duplicated, it ignores it to save space!

Convenient belt-wearing position means you can read the display in situ. And back in the office the pager can be linked to a computer printer to give a convenient 'hard copy' message reference. It works from your home security alarm too!

With features far, far more than we could possibly list here, the National is absolutely the latest and the best in pocket pagers.

Compare the price to the 'ordinary' pager you have now. You'll probably find that it costs no more to have the best!



Sydney Numeric Pager: Cat D-1012
Melbourne Numeric Pager: Cat D-1013

ONLY \$249 each



Once purchased (and the \$12 connection fee is paid) the service fee for the alpha-numeric pager is only \$35 per month.

Isn't it worth that much to keep in touch?

Sydney Alpha-Numeric Pager: Cat D-1022
Melbourne Alpha-Numeric Pager: Cat D-1023
Commercial Leasing? yes, your local Dick Smith Electronics store will be glad to arrange commercial leasing for you (to approved customers).

\$569



Beeper

The first affordable pocket radio paging beeper. So affordable, in fact, that all types of people are getting them. That's why they're called Beepees: the Beeper for People!

The Beeper means you're never out of touch. If you must be contacted, a phone call almost instantly sounds the Beeper in your pocket. And if you wish, up to four different tones can be arranged (four different phone numbers).

It even works from your home security alarm - ask us about this.

Until now, only business executives have been able to afford pagers. Rentals of \$50 and more each month were not uncommon. The Beeper has changed all that! You own the Beeper yourself: no expensive leases to keep paying!

All you pay is a once-only connection fee and a low annual charge for the use of the system. Think of the applications apart from business. You can go to the show knowing the babysitter can contact you. You can even use it to call the kids home for dinner!

At present, the Beeper is available only in Sydney, Melbourne, Newcastle and surrounding areas. This year, however, will see expansion to other capital cities.

What does it cost?

The Beeper itself costs just \$99.00 - that's all! Annual fees depend on the number of stations (tones) you require. A single station costs just \$84 per annum. 2 stations \$104, 3 stations \$124 and all 4 stations just \$144.

And there's a once-only connection fee of just \$12.00 per line. That's all you have to pay! Beeper: the Beeper for People. At these low prices for you!

Sydney Beeper: Cat D-1002
Melbourne Beeper: Cat D-1003

\$99

The real alternative – Olivetti-AT&T M24

Yes! The finest alternative yet. Born of the most important partnership in the history of computing.

A fast, flexible, reliable personal computer that is much more than just a superior piece of hardware.

Behind it is a commitment to a better way of managing information and communications. One that can pay off handsomely in increased productivity and profits: Because it is designed to be flexible enough to meet all your business needs – today and in the future.

Whether you use it as a stand-alone work station, or in a fully integrated system, you'll find the M24 a high performance machine. And a hard working addition to your office.

Streamlined and efficient in design, the M24 is robust and physically stable, with a footprint smaller than most business class PCs. And there's less radio frequency interference due to the metal case. One heavy duty power supply is used for improved reliability...

All users can benefit from the highly sophisticated graphics facilities, offered as a standard feature. The elegantly styled 300mm green phosphor screen is designed for fatigue free viewing, and gives 4 simultaneous shades of green from a palette of 16 shades. Several graphics resolutions are available up to an amazing 640 x 400 pixels. So even after a heavy day in front of the screen you can walk away still feeling fresh.

The keyboard is an industry-standard compatible keyboard of slimline construction. It features 83 keys, including 10 function keys and numeric pad for maximum programming flexibility. Keys are well spaced with positive movement for fewer errors. Incorporated in the design of the keyboard are adjustable legs for the selection of the working angle most comfortable to the user. As well, provision is made for the connection of a mouse giving greater control of the cursor movement which is particularly useful when working with graphics.

The basic unit of the M24 contains a high speed (8MHz) Intel 8086 16-bit microprocessor, using true 16-bit communication between the basic elements mounted in the module. This

gives the M24 substantial performance advantage over many comparable personal computers using 8/16 bit communication @ 4.77MHz.

The M24 incorporates such features as sound circuitry, parallel port, RS-232-C serial port, clock/ calendar chip with battery back-up, plus socket and circuitry for a dual channel integrated communications chip. All this adds up to one of the best investment potentials on the market today!

Software Range

The limitation of many otherwise good computers is their operating system.

As you'd expect, the M-24 is also totally compatible with the MS-DOS operating system. It runs the most popular off-the-shelf software (including Symphony, Lotus 1-2-3, Framework and Flight Simulator) with no modification. Financial analysis. Forecasting. Budgeting. Word processing. Inventory. The Olivetti M24 does it all.

But it doesn't end there. The Olivetti M24 also supports concurrent CP/M-86*, UCSD P-System* and PCOS (requires Z8000 board).

And its flexibility means that when it's time to expand, the M24 will actually make your computer growing pains painless.

Now the Olivetti-AT&T PC is ready for business.

For a more comprehensive list of available programs see Page 39 of this catalogue.

Warranty and Service

The manufacturer's full six month warranty applies to all Olivetti Computers sold by Dick Smith Electronics.

All warranty service is done by Olivetti in their own service centres, using factory-trained technicians and genuine Olivetti spares. Higher levels of service, including "on-site" service, are also available both during the warranty period and after. Ask for details at your nearest Dick Smith Electronics store.

Specifications

Basic Unit

- ☐ 16-bit 8086 CPU (8MHz)
- ☐ Socket for optional 8087 numeric Processor
- ☐ 16K ROM for bootstrapping, power-on diagnostics and BIOS
- ☐ 128K RAM (standard system)
- ☐ 256K RAM (expanded system)
- ☐ One or two 360K slim floppy disks
- ☐ Alphanumeric and graphic monochrome and colour display controller with 4 simultaneous 'shades of grey' or colours from a palette of 16
- ☐ Asynchronous serial port (RS 232)
- ☐ Parallel port (Centronics)
- ☐ Socket for optional communications adaptor
- ☐ DMA circuitry
- ☐ Sound circuitry
- ☐ Calendar/clock with battery
- ☐ One expansion slot (none if hard disk present)
- ☐ Bus converter with 7 industry standard expansion slots (optional)

Keyboard

- ☐ 83 key industry standard keyboard
- ☐ Tactile and acoustic feedback
- ☐ N-key rollover
- ☐ Interface for optional mouse

Display

- ☐ Monochrome (300mm) green phosphor screen
- ☐ 80x25, 40x25, 64x16 (col. x lines) characters
- ☐ High resolution graphics: 640x400, 640x200, 320x200, 512x256 pixel resolution

Operating System

- ☐ MS-DOS (operational compatibility with industry-standard personal Computers)

Physical Characteristics

- ☐ Size: Basic unit- 380W x 160H x 300D mm

Standard System
only

\$3995

Comprising:

- Olivetti M24 Base Unit** with 128K RAM and one 360K disk drive, Cat X-5200..... **\$2900**
- Olivetti IBM Style Keyboard** Cat X-5210 ... **\$344**
- Olivetti High Res. Green Screen Monitor** Cat X-5205 **\$636**
- MS-DOS Operating System** with GW Basic Cat X-5250 **\$120**

Expanded System

\$4495

Comprising:

- Olivetti M24 Base Unit** with 256K RAM and two 360K disk drives, Cat X-5201 **\$3429**
- Plus Keyboard, Monitor and Operating System as above.

Options

- 64K Memory Expansion Kit** (two needed to expand Standard System to 256K)
- Cat X-1187 **\$65**
- Disk Drive** (360K) to suit Standard System
- Cat X-5215 **\$399**
- 7-Slot Bus Converter** – gives you seven slots for expansion boards
- Cat X-5220 **\$200**



The portable alternative

Olivetti-AT&T M21

It's the M21, a compact M24. And it makes the average portable look suspiciously like a toy.

It's fast, flexible, expandable. A high-performance machine with high resolution graphics and a range of integrated options, just like its best selling brother.

A portable with all the power of the most advanced PCs. Hi-tech with a handle. And amazing value for money.

Cat X-5204
Includes two 360K disk drives and 128K RAM.

\$4495

COMPUTERS COMPUTERS COM



The 1985 256K CHALLENGER[®]

MUCH MORE COMPUTER FOR NO MORE COST!

Wow! The Challenger has done it. And it's still coming up a winner!

A year ago the Challenger was the best value for money computer on the market. Today, it costs the same. That's incredible value in the world where you don't know how much a dollar is worth from one day to the next.

But now the **NEW CHALLENGER** gives you much, much **MORE!** An enormous 256K RAM memory is now standard with your Challenger. That's enough power to handle just about any personal or business task. With a maximum RAM of 640K there's no limit to what you can get your Challenger to do.

If you were thinking about an IBM PC then perhaps you should think again. The **NEW Challenger** gives you just about everything the PC gives — except the price. And what's more you get heaps of features on the Challenger that IBM charge for. Look at these features Challenger gives you as standard: RGB Output

and Graphics. Twin 360K Disk Drives. Disk Operating Systems. Parallel Printer Port. Serial Port. Joystick Port. If you wanted to add these features to your IBM you'd pay hundreds of dollars more than its standard price. But with the New Challenger you pay no extra.

What's more the Challenger is **SOFTWARE COMPATIBLE** with the IBM. For you that means an incredible variety of programs is available!

And the new Challenger is quality guaranteed! Each Challenger is individually 100% quality tested and comes complete with its own test results.

IS IT REALLY SOFTWARE COMPATIBLE?

Compatibility is a tricky business: some software made for the IBM PC won't even work on certain configurations of the PC itself. A few odd programs rely specifically on minor internal details of the IBM PC which cannot be duplicated legally on other machines.

The Challenger is about as compatible with the IBM PC as you can get. This means it can run just about all of the huge range of



software written for the PC — just pop in the disk, load and go.

PLUS SOFTWARE WORTH OVER \$800 FREE!

That's right — with the Challenger we give you a set of software and manuals absolutely **FREE!** With the IBM PC, it's all optional at extra cost!

We don't give you useless software either. In fact it's all the software you're likely to need for most home and office computing. **MICROSOFT MS-DOS, GW DISK BASIC** — Most widely used disk BASIC for the IBM PC itself.

PERFECT WRITER/SPELLER V2.0*: One of the most popular word processing systems in the world.

PERFECT FILER V2.0*: Lets you design your own filing systems and mailing lists.

PERFECT CALC V2.0*: The electronic spreadsheet to beat them all! All of this software comes complete with user manuals, and it's included **FREE** with the Challenger!

SPECIFICATIONS:

CPU: 8086 full 16-bit processor running at 4.77MHz.

RAM: 256K user RAM, internal 16K video RAM.

ROM: 8K diagnostic and BIOS

KEYBOARD: Separate with 84 keys including numeric/cursor control group, 10 function keys.

CHARACTER SET 256 expanded ASCII

RESOLUTION: 640 x 200, 320 x 200

COLOUR GRAPHICS: 8 colours with scroll, reverse, blinking.

INPUT/OUTPUT: RF output for TV receiver, composite video and RGB outputs for video monitors, cassette I/O port, joystick port, Centronics-type parallel printer port, RS-232C serial communications port, inbuilt speaker.

DISK DRIVES: Twin slimline, double sided, double density, total storage capacity 720K.

EXPANSION: Three expansion slots, two true 16-bit expansion slots.

\$2990

Terms available to approved customers

Cat X-8605

* We reserve the right to supply equivalent or improved software.



**NEW
FOR 85**

The Bondwell 14 Portable Computer

How good can a portable computer be? Well, we think the Bondwell 14 is good enough to write ALL of this catalogue: Yes, all copy was prepared using the Bondwell 14! Why not use one of the bigger more expensive units? Because the Bondwell has been able to handle anything we demanded of it, it's been easy to use. The 225mm non-glare amber monitor is sharp and easy on the eyes so you don't feel totally exhausted at the end of the day. There's excellent resolution so it's easier to edit copy and that means fewer mistakes to be corrected later on.

It's portable so we can move it from desk to desk, office to office just like carrying a portable typewriter. Except that when we carry the Bondwell 14 we carry all our information with us! EXCLUSIVE to DICK SMITH ELECTRONICS the Bondwell 14 was hailed in the USA as one of the best computers to come out of 1984! And it's little wonder.

If you're looking for a computer to run your business, manage your stock, write reports, memos, correspondence, or a novel, file anything, then the Bondwell can handle the job.

With 128K of RAM memory the Bondwell outshines just about any of its competitors by 2 to 1. Even if they can match its memory, they can't match its price. Add to this the twin double density, double sided disk drives built-in, each with 360K capacity, and you have a system which has almost unlimited potential.

Operates from the world-standard CP/M Vs.3.0 system it will always have an incredibly large range of software available for it. Bondwell will read disk files from other machines such as the Osborne, Kaypro, IBM PC and Spectravideo giving you greater access to information.

The ergonomically designed keyboard and layout (including user adjustable inclination) 16 user-definable keys, positive action keyboard and the compact design all add up to make the Bondwell one of the most convenient and easy-to-use PC's available.

What about peripherals? The Bondwell offers the maximum flexibility when it comes to add-ons and extensions. It's simple to connect printers, a second monitors or even a compatible computer. TWO RS-232C ports, a parallel port and an external monitor jack are all included. And just to give you a little more, you'll find the Bondwell incorporates a speech synthesiser: just load a speech program and it will talk to you!

It even includes a printer buffer (spooler) so you can get on with more important things while your printer catches up. Now that's thinking. And convenience!

What good is a computer without software? Well, it could sit on your desk and look pretty. But we're sure you won't be able to wait to use your new Bondwell ... So, look what we GIVE you with every Bondwell purchase!

OVER \$1200 WORTH OF FAMOUS MICROPRO SOFTWARE ... FREE!

So you can put your Bondwell to work for you immediately you get it home, you get

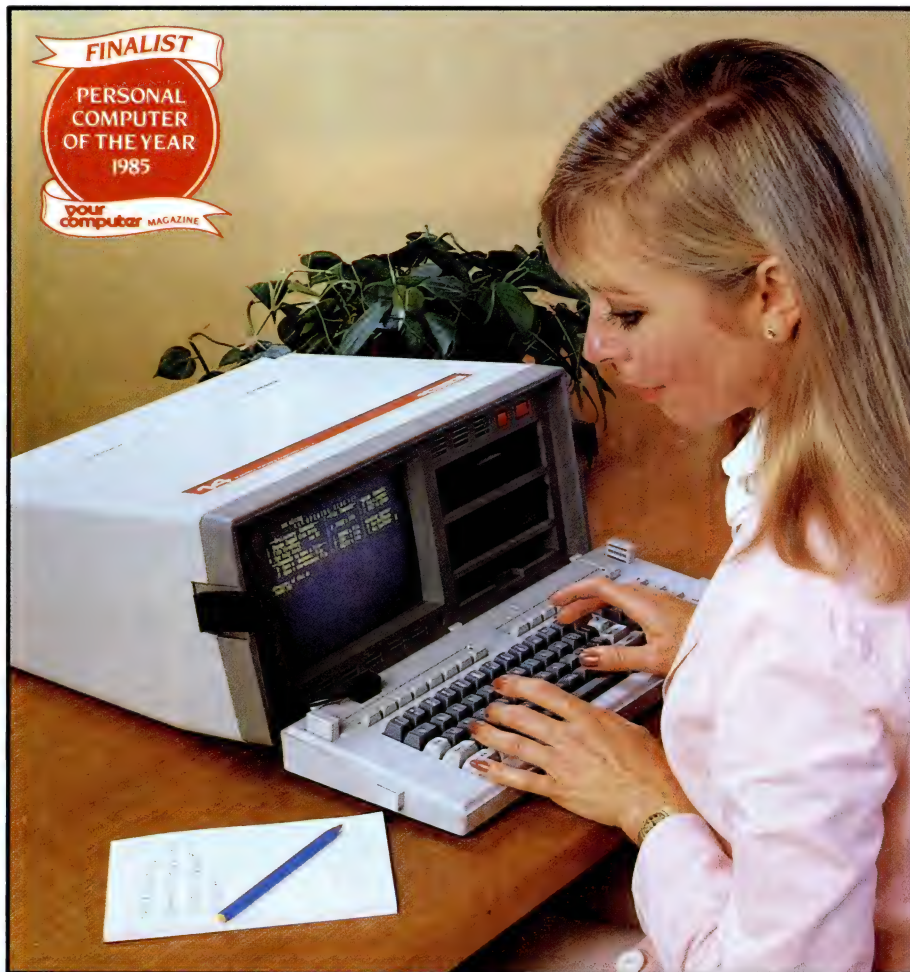
Micropro bundled software: Wordstar, Calcstar, Mailmerge, Datastar, Reportstar. Probably all you'll ever need to run your business. And that's over \$1200 worth.....Absolutely FREE. *

Most CP/M programs will operate in the Bondwell 14: not just Vs 3.0, but earlier versions too. This means you have an almost limitless choice of programs available.

Now it's not really so difficult to see why we chose the Bondwell to write this catalogue. With all the features, it speaks for itself!

SPECIFICATIONS:

CPU: Z80 **Monitor:** 225mm amber display
Disk Drive: 2 DS/DD floppy disks
RAM: 128K
Drive Capacity: 360K — each disk
Outlet Ports: 2 x RS-232C, Parallel Port, Monitor Jack
Operating System: CP/M Vs 3.0
Weight: 21kgs
Size: 430w x 190h x 380d



\$2295

Cat X-9000

ACCESSORIES:

Bondwell 14 Disk Basic Cat X-9008 **\$69.95**
Bondwell 14 Printer Cable Cat X-9005 **\$40.00**

The Cat™ Personal Colour Computer

Did you know that our cat is herbivorous? Well it's not exactly a 'vegie'. Not like some other computers we know. It's just that it has a particular liking for fruit. Well, to tell the truth — it'll eat an Apple II series computer.

THE CAT, our famous personal computer has become one of the fastest selling PCs around and it's little wonder when you consider its power and features. Compare it to the other and you'll find it's by far the best value for money unit available today!

THE CAT is not an Apple clone or copy. It's an entirely new personal computer design, developed using the latest technologies. Although THE CAT is not a copy it is at the same time highly software compatible with the Apple II series. For YOU this means that it will run virtually all the enormous range of software available for the Apple II family. And that's good sense. It gives you a huge choice of good quality software.

What makes THE CAT so popular? Performance, power and incredible value for money are just some of the reasons, but let's just have a look and see!

The Apple II has a 16K ROM. Not bad: but THE CAT has a massive 32K! Which would you choose?

THE CAT has a keyboard of 81 keys, including a numeric keypad for faster number entry and 8 special function keys capable of 24 different (and software programmable) functions. 'It', on the other hand, has only 63 keys, no numeric key pad and only 2 special function keys.

THE CAT gives you a full 80-column text display even in the basic computer. The Apple? You need to buy some extra bits.

THE CAT gives you super high resolution colour graphics with an incredible 560 x 192 pixels, all individually addressable and with a choice of 6 colours. If you could put 2 Apples together you'd get something which compared.

THE CAT also gives you 8 colours in 280 x 192 mode, not just 6 as with Apple. And there's much much more! Like RGB colour output as standard (but not with the Apple). Centronics printer port, standard - but not with the . . . Guess who has twice the clock speed of the Apple (2MHz vs. 1MHz) - More sound channels (4 to 1) and the list goes on.

But what's the best thing of all about THE CAT? It's the PRICE. Compare that and you'll find there's just no comparison at all!

Incredible Software Range!

Although the internal architecture and ROM programs of our new CAT have a brand new design, great care has been taken to make them as compatible with Apple II software as the law will allow.

Even though the basic CAT will run a very large number of Apple II programs (including such famous programs as Visi Calc and Sargon), by adding the optional Emulator cartridge (Cat X-7530) it will run virtually all* of the Apple II range of software — and enormous range of high-quality programs.

Specifications:

CPU: 6502A running at 2MHz
ROM: 32K bytes containing 24K enhanced Microsoft BASIC, System Monitor etc.
RAM: 64K bytes inbuilt.
KEYBOARD: 81 full-stroke keys; typewriter format plus numeric keypad, 4 cursor control keys, 8 programmable function keys with 24 predefined functions. Full upper and lower case entry.
VIDEO: Both composite PAL and RGB colour video outputs inbuilt (optional TV modulator available). Both 80 x 24 and 40 x 24 text display modes inbuilt. Colour defeat switch for mono display.
GRAPHICS: Maximum colour graphics resolution is 560 x 192 pixels, individually addressable (twice the Apple II resolution).
SOUND: Four programmable sound channels, 6-octave note range. Inbuilt speaker with volume control.
I/O FACILITIES: Cassette port inbuilt, Joystick port inbuilt, Centronics-type printer port inbuilt, Bus expansion interface, expansion cartridge socket, connector for RS-232C serial adaptor.



Basic Cat Computer

ONLY
\$699
 Cat X-7500

THE cat™
 DICK SMITH PERSONAL COMPUTER

* Ask us for a complete list of tried and proven Apple II series software that will run on THE CAT.

Extra cartridges & monitor shown are available at extra cost.

And the Cat Grows to Fill Your Needs

As you gain experience, your CAT Personal Colour Computer can grow to match your needs. Whether you just want to add joysticks and an RF modulator, or expand your system with twin floppy disk drives and an RS-232 serial communications adaptor, the expansion and support components are all available – and at very attractive prices. You can have an expanded CAT for less than the price of a basic Apple II!

1. Dual Joysticks

These fast-response joysticks each have dual FIRE buttons, and use pots for extremely high resolution. To the software, one is functionally identical to the single Apple joystick.

Cat X-7520 \$34.50

2. Emulator Cartridge

Need the highest possible degree of Apple II compatibility? If so, this Emulator is for you. Plug it in and your CAT will run virtually all Apple II software.

Cat X-7530 \$99.00

3. RF Modulator

If you don't have a composite or RGB video monitor, this modulator lets you connect the CAT to a standard monochrome or colour TV receiver. Works on VHF channel 1.

Cat X-7550 \$34.90

4. Disk Controller

Built into a compact plug-in cartridge, this controller will operate either one or two X-7506 drives. To get you going.

Cat X-7510 \$149.00

5. Disk Drive

Compact and powered from the CAT itself, this disk drive lets you store up to 165K bytes per 5-1/4 inch diskette. Comes complete with cable connecting to the X-7510 controller.

Cat X-7506 \$349.00

6. High Resolution RGB Monitor

An RGB colour monitor gives the sharpest brightest colour display possible. This high resolution 30cm monitor lets you take full advantage of your CAT's 560 x 192 colour graphics and 80-column text features.

Cat X-1193 \$649.00

7. RS-232C Serial Adaptor

Plug in this interface adaptor into the socket on the rear of your CAT and it can communicate with other computers or data terminals - either directly, or via a telephone modem. Operates at seven data rates, from 110-9600 baud.

Cat X-7515 \$129.00

8. Other Expansion Items

X-7513 Filer Utilities Disk complete with DOS and user manual (suits either CAT or Apple II) \$39.95

X-7540 Printer Cable suits most Centronics-type parallel printers \$39.00



The Ideal Learning Aid:

catnet™

Total control of communication in the classroom! The teacher can simultaneously download data and information to up to 16 students (each with their own Cat) and can then selectively 'talk' to individual students - via the computer. Any slave terminal may request help from the teacher: it will even beep the teacher to alert them. All this at high speed - 16K in just approx 20 secs. There's no degradation in performance as additional slaves are connected - and the cabling is very simple: no costly installation here!

A unique 'queue' facility allows multiple student enquiries - and because the slave cartridge only uses 16 bytes of user RAM it leaves maximum space for working.

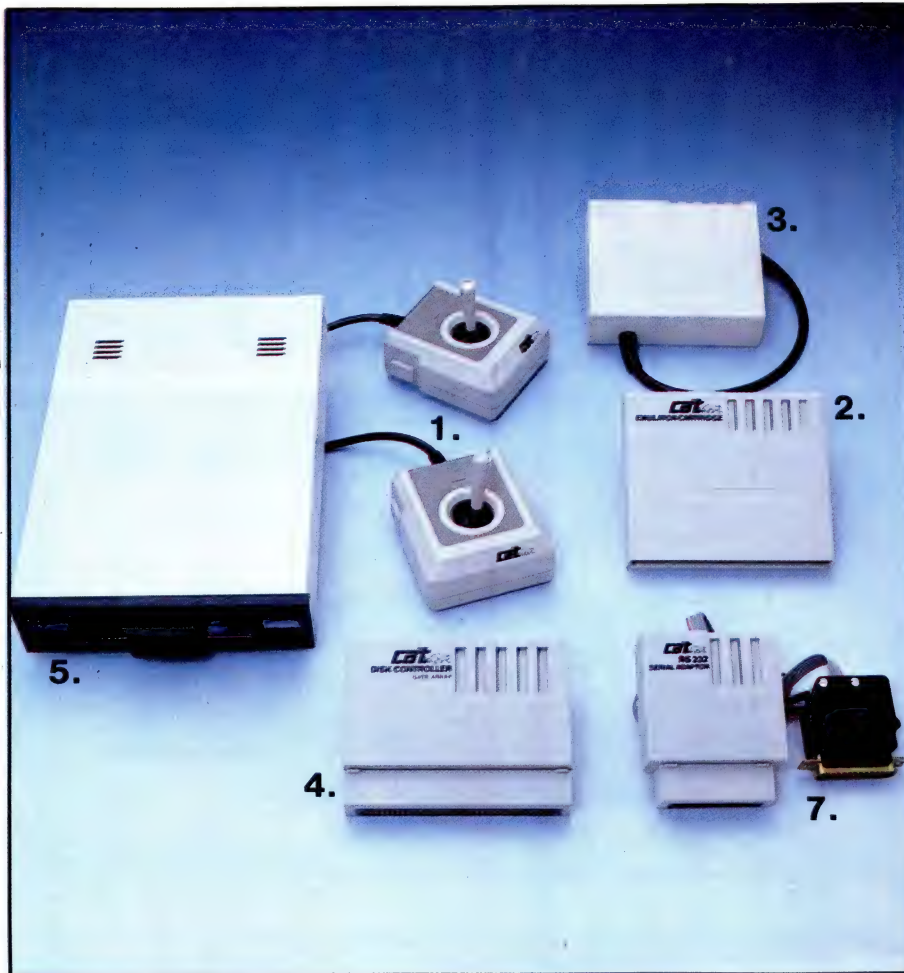
This outstanding system is a fraction of the cost of other classroom control systems.

Cat Net Components:

Cat Net Controller (one required per system)
Cat X-7595 \$349.00

Cat Net Master RS232 Interface (one req. per system)
Cat X-7596 \$139.00

Cat Net Slave Cartridges (one req. per student)
Cat X-7597 \$79.00



**BIG BROTHER
OF THE FANTASTICALLY
SUCCESSFUL VZ-200!**

The one you've waited for...

VZ-300 Colour Computer!

Remember the VZ-200? Remember how long it was the best value for money computer around? Now the VZ-300 gives you even more incredible value! The computer for the home, office or classroom. Student or teacher the VZ-300 offers more from the beginning and even more as you advance.

For the **BEGINNER** it offers all the power you'll need to get started. And as your expertise grows, there's a huge range of peripherals you can add on. If you start with the VZ-300 you won't have to change your system as soon as you learn how to use it.

For the **EXPERT** it offers an incredibly low priced computer with 18K memory expandable to a huge 64K and an enormous range of peripherals for business, teaching, or pleasure. And the VZ-300 is now available with its own **DISK-DRIVE**.

For the **KIDS** it offers an incredible array of games and educational programs. Show them that learning can be fun with 9 colour graphics and musical notes as they learn the basics of computer programming!

The VZ-300 gives you much, much more!

MORE memory! Now you get 18K RAM memory so all you have to do is plug into your TV or video (all the connecting cables are supplied) and you can immediately start running your own programs.

MORE room for expansion with the 16K or 64K* expansion module, add-on disk drive, printer/plotter joystick controllers.

MORE colour! Now you have the choice of three separate screen modes, each at the touch of a button — with 9 colours for use in programming or word processing. Incredible value is not all you get with your VZ-300! Unbelievable expansion possibilities. Straight talk operating manuals in easy-to-follow steps with lots of illustrations. Built in cassette interface. Built-in video modulator interface. All necessary interconnecting cords. And all the room you need for **RON** — Later on that is!

Fantastic Range of Software!

'Microsoft Basic' is the most popular computer language in the world and it's built right into your VZ-300. As a result you get an incredible range of software to choose from, dozens of **GAMES**, **EDUCATIONAL** and **BUSINESS/MANAGEMENT** programs. See page 39 for the full range of software programs.

Specifications

CPU. Z80 running at 3.54MHz

MEMORY. ROM-16K BASIC interpreter & operating system.

RAM. 18K expandable to 64K*.

KEYBOARD. 45 key full stroke keyboard with space bar. Automatic repeat key. 'Beep' for entry key.

SCREEN Text — 32 columns x 16 lines. Graphics — 128 x 64 dots (8 colours) / 64 x 32 dots (9 colours). Mix text and graphics — 32 columns x 16 rows / 64 x 32 dots (9 colours). Selectable colours.

CASSETTE INTERFACE — Connect to ordinary cassette recorder (Baud rate 600BPS) Interface cord included. (For best results use **VZ Datasette**).

DISPLAY RF outlet to TV, antenna cord included. Video monitor to output.

POWER. Single 10V DC, 1A supply (adaptor included).

*64K expansion allows the user to address 32K in Basic but the further two 16K RAM pages is addressed by bank switching in assembler language.



1. Disk Drive *

Now you can have almost unlimited storage capacity for your VZ-300. Store your records and programs for instant access. Just like the big ones! **\$249**
Cat X-7302

2. Printer Interface *

When you need to print hard copy of programs and data. This low cost unit simply plugs into the back of your VZ-300 and lets you connect your printer.

Cat X-7320 **\$39⁵⁰**

3. Joysticks and Interface *

Add new dimensions to your games with these super responsive joysticks. Comfortable lightweight and easy to operate. Cat X-7315 **\$39⁵⁰**

4. Four Colour Printer/Plotter *

More than just a printer but an X/Y plotter as well! Use it to produce graphs, pie charts, and printing in four different colours. All easily produced using simple commands.

Cat X-7208 **\$129**

5. Memory Expansion Modules *

Just so it doesn't forget! Take your VZ-300 memory from 18K to 32K units. You'd hardly need any more.

16K Module **\$79** 64K Module **\$149**
Cat X-7306 Cat X-7308

6. Disk Controller *

So your computer can talk to your disk drive! It needs an interpreter, someone who speaks its language. Cat X-7304 **\$79**

7. Data Cassette *

Store your programs and data for later retrieval! This deluxe recorder is made just for the VZ-300. Plugs straight in. Cat X-7310 **\$69⁵⁰**

VZ-300 Colour Computer

Cat X-7300

ONLY \$199



* **UPGRADE!** All items marked * will also work with your VZ-200

The one you can't afford not to own!

AQUARIUS™

**NEW
FOR 85**

The REAL computer that starts from under \$100! You'd love to learn about computers? But thought all you could buy for your money were a few boring games. Now, we are the EXCLUSIVE Australian distributors of the new Aquarius. Not the "Claytons" computer but the perfect beginner's computer which gives you the opportunity to see what a real computer does.

Learn how to RUN YOUR OWN PROGRAMS in the Basic language! PLAY GAMES! Organise your HOUSEHOLD FILES! And much much more!

Simply connect the Aquarius to any colour TV and it's ready to teach and entertain the whole family. There's something for everyone. And what's more, you won't outgrow the Aquarius! As you need to learn more, the Aquarius offers a huge range of additions that will take you into the world of electronic wizardry once offered only by the BIG ones.

With a full moving-key keyboard Aquarius is truly EASY to USE. Microsoft BASIC computer language is built right in! The easy-to-read manual and simplified instruction cards make learning a snap.

CREATE your own VISUAL EFFECTS with 16 colours an 256 built-in characters or design your own sound effects! Once you start to expand your Aquarius with the huge software and hardware range you'll find endless uses and possibilities for your system. With it's own mini expander, data recorder, memory expansion cartridges and thermal printer you'll soon wonder what the Great Computer Secret was all about!

Fantastic Software Range!

With more than two dozen fantastic games and educational programs available now and many being developed to add to the range shortly, there's just no end to the versatility of Aquarius. Software cartridges just plug into your Aquarius and you're ready for work or play. All software programs are available separately so you can purchase only those which interest you.

AQUARIUS with built in 2K memory (expandable to 34K) and its long list of expansion units and software is the REAL computer for the price of a TOY!

1. Mini Expander

Adds versatility to your AQUARIUS. Game playing is easier and more exciting with 2 detachable hand controllers and additional sound channels. Also has 2 cartridge ports so you can plug in your expanded memory cartridge into one even while you're using software in the other.

Cat X-6005..... **\$69**

2. Data Recorder

Save your own program or utilise one of the many great software programs available on cassette with this great value unit.

Cat X-6010..... **\$49**

3. Memory Expansion Cartridges

16K or 32K memory cartridges give you far greater flexibility by giving your computer a much larger memory. For more advanced programming.

16K Cartridge Cat X-6015..... **\$69**

32K Cartridge Cat X-6020..... **\$129**

4. Thermal Printer

Ideal for documenting programs, keeping records or printing charts and records. You'll probably never again see one at this price!

Cat X-6025..... **\$129**

Paper roll to suit. Cat X-6026 **\$350**

Aquarius Colour Computer

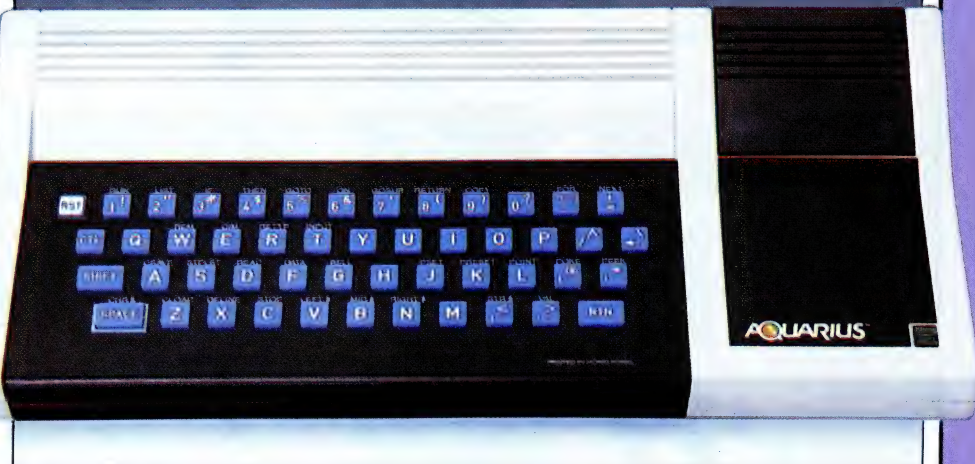
Cat X-6000

**Fantastic
Value
ONLY**

\$99



34K EXPANDABLE!



PERIPHERALS

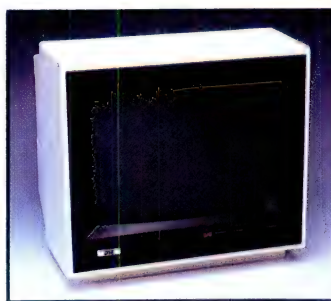
PERIPHERALS



High Resolution RGB Monitor

For the sharpest, brightest colour display, an RGB colour monitor is essential. Our new RGB colour monitor has a 30cm hi-res tube couple with video amplifiers of 18MHz bandwidth: the result is truly superb. RGB plus composite NTSC video (ideal for satellite TV), excellent for 80 column text display or 650 x 200 graphics.
Cat X-1193

\$649



High Resolution Green or Amber Monitors

If you don't need colour, here's the best choice: high res monitors in your choice of green or amber phosphors. (Personal preference of operators means a lot!) Ideal for use with most microcomputers, standard composite video input.

Green Screen Cat X-1222
Amber Screen Cat X-1227

\$249



Colour Monitor

Don't need the highest resolution in a colour monitor? This low cost monitor offers excellent value for money. It has a 34cm vertical stripe tube, accepts normal composite PAL video plus audio if desired. Compatible with most colour computers, but not quite capable of displaying 80-column text or hi-res graphics. It also makes an excellent video monitor for use with your video cassette recorder!
Cat X-1195

\$449



Dataphone II

Australia's first - and fastest selling - direct connect data modem is even better value. Model II includes a push-button phone for greater convenience - at no extra charge! And the modem simply plugs in to any Telecom socket: no delays or costly installation fees.

- 300 baud full duplex
- Answer/Originate switch
- Includes push button phone
- Telecom Authorisation C83/37/1080

Cat X-3272

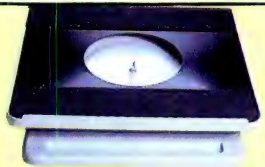
\$199

Monitor Dust Cover to suit above Monitors Cat X-1197 ...\$6.50

Monitor Swivel Base

Screen angle wrong? Causing fatigue? Here's the answer! A swivel base allows adjustment in both horizontal and vertical planes: lets you get the right angle of viewing for your system.
Cat X-1190

\$29.50



DSE REMOTE BULLETIN BOARD

Calling all computer owners... did you know that Dick Smith Electronics offers a free Remote Bulletin Board System (RBBS) to all computer owners?

It offers:

- Public domain software up and download
- Electronic mail/message facilities
- And much, much more

CALL THE DSE RBBS

(02) 887 2276

● 300 baud ● 8 data bits ● 1 stop bit ● No parity

SHARP Pocket Computers



PC-1246

- Both computers feature an integral slide-on protective cover!

The new PC-1246 gives you more power and speed in a pocket computer. It does heaps! All 18 alphabet keys are pre-programmed with a common basic function for ease of operation and programming. 16 letters or numerals on a 5 x 7 dot matrix screen for clear displays. And you can perform just about any scientific or mathematical calculation you'll ever need. Power, trig, exponents, logs, absolutes, logic, etc. etc. There's 8 stacks for data, 10 for subroutines and 16 for functions. Now that's stacks! A special battery back up system is built in so you don't lose your previous entry in case it's turned off in the middle of a program. Why not reach into your pocket? And pull out a computer!
Cat X-5120

\$79

Tax free \$71.60



PC-1350

Famous brand Sharp pocket computer with expandable memory! Now you can really have a computer in your pocket. For business and technical use it's incredibly versatile. The large LCD display features 24 characters by 4 lines or graphics of 150 X 32 dots. 40K of ROM built in. But it doesn't stop there, with the addition of the expansion RAM cards the memory can be extended to an incredible 21K. What's more, you can save your information with the cassette interface or thermal printer for hard copy of those programs, graphs, etc. Of course it can be used as a calculator with 17 scientific functions, or for inventory or sales analysis. And YES! It still fits in your pocket!
Cat X-5115

only **\$249**

Tax free \$225.57

RAM CARDS: Credit card size with their own battery so they don't forget while they're not being used. Available in 8K & 16K RAM to provide your PC-1350 with huge memory potential. They just slip into the back of the unit!

8K RAM Cat X-5117 \$99.95
16K RAM Cat X-5118 \$199



CE-126P Thermal Printer & Cassette Interface

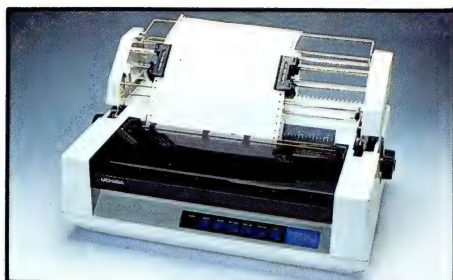
Hard copy from your PC-1350 or PC-1246 computer for easy-to-read text, numerical data, tables and graphs in an instant. The dot matrix printer gives clear copy with 24 digit lines on a 67mm roll. Battery powered so it's completely portable. Ideal for the person on the move: anywhere you need to keep information, data etc in hard copy form!
Cat X-5119

\$120

Tax free \$117.69

Paper roll to suit above: **\$4.10**
Cat X-5121

PERIPHERALS PERIPHERALS P



Budget Daisywheel Printer

If you're using your computer for word processing, this daisywheel printer will give you top quality printing at a budget price. Prints at 18 cps. Offers a choice of 3 pitches (10/12/15 cpi) plus proportional. Takes standard 96-character print wheels and ribbon cartridges (Diablo/Qume compatible), paper up to 330mm wide. Very quiet too: only 58 dBA. Standard Centronics-type interface suits most popular computers.

Cat X-3270
(Tractor feed extra)

Only \$599

Ribbon Cartridge for X-3270 printer

Cat X-3271 \$14.50

Tractor feed attachment as shown above

Cat X-3273 \$119



Daisywheel Printer/Typewriter

Don't quite know what you want? An electronic typewriter with all the latest features... or a daisy-wheel printer for your computer (word processing, etc?)

How about both: in one package! A self-correcting typewriter for all your 'normal' work, which also has a standard Centronics-type parallel interface inbuilt: interfaces with most personal computers! Handles paper to 340mm wide.

Cat X-3290

\$799



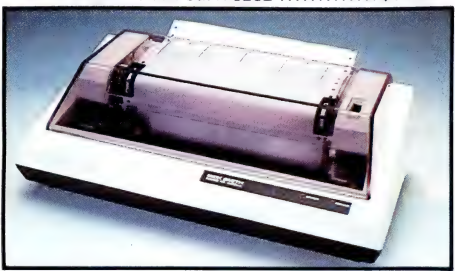
CPA 80 Dot Matrix Printer

When quality of print is less important than top speed printing, you want dot matrix. And for the best in dot matrix printing, you want this superb CPA 80 budget printer. Features print speed of 100 characters per second with 40, 80 and 142 columns (selectable), adjustable sprocket feed PLUS friction feed (capable of handling fanfold, single sheet or roll paper)... it's got the lot! Print graphics and text in a wide range of styles - and the Centronics interface means it will operate with just about any computer. This really is amazing value for such versatility and performance.

Cat X-3281

Only \$399

Printer Ribbon to suit Cat X-3282 \$14.90

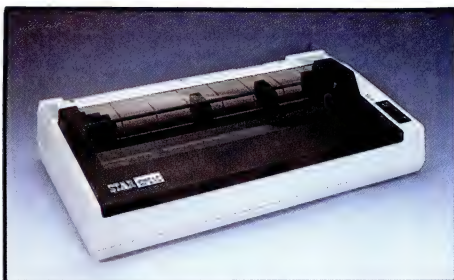


GP-100 Dot Matrix Printer

Dot matrix printing at a rock-bottom price! The GP-100 uses a unique 'uni hammer' to reduce moving parts, give greater reliability and performance. Prints at 50 characters per second, provides full upper/lower case ASCII character set (max 80 columns) PLUS dot addressable graphics (480 dots/line). Sprocket feed, takes standard 242mm wide fan-fold paper.

Cat X-3250

Only \$225



STAR DP 515 Dot Matrix Printer

Even more performance! Handle text or graphics with ease - with the magnificent STAR DP 515: its quality design and construction will ensure long, trouble free life. 96 column format with a print speed of 100 characters per second, it's ideal for printing invoices, reports, etc etc in business & industry - or for the computer enthusiast. Suits paper widths from 20 to 38.1cm, with normal or enlarged print. These advanced features are yours at a budget price.

Cat X-3285

Only \$699



DSE ZIPPER Print Spooler

Let's face it: waiting for your printer to finish wastes hours of precious time. If it doesn't have a buffer, all you can do is sit and look at it!

Now there's the DSE Zipper Print Spooler: with a 64K memory of its own, it connects between printer and computer to hold print from the computer until the printer catches up! It's fantastic with daisywheels and other slow printers - your computer is free to continue processing words or crunching numbers!

\$269

Printer Ribbons & Paper

Printer Ribbon for GP-80 Printer (X-3252)	
Cat X-3253	\$14.50
Printer Ribbon for 8300P Printer (X3255)	
Cat X-3258	\$ 7.95
Printer Ribbon for 8510 Printer (X-3260)	
Cat X-3261	\$14.50
Printer Ribbon for F10-40P Printer (X-3265)	
Cat X-3266	\$ 9.75
Printer Ribbon for BX-100 Printer (X-3278)	
Cat X-3279	\$18.95
Printer Ribbon for Canon Typstar	
Cat X-3297	\$ 3.25
Print Ribbon to suit X-3240	
Cat X-3241	\$ 5.50
Print Ribbon to suit Cat X-2390	
Cat X-3291	\$11.50
Correction Ribon to suit Cat X-3290	
Cat X-3292	\$ 2.75

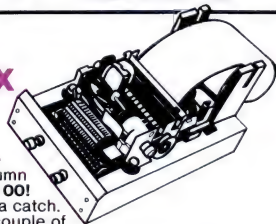
Bargain Dot Matrix Printer

The best news computer owners have had in years! A 40 column printer for less than \$100! Yes, of course there's a catch. You have to supply a couple of hours labour to build the power supply yourself and connect it to the printer mechanism. So for the cost of a bit of assembly, you'll save heaps. And look what you get - 40 column Dot Matrix format. Fast 48cps print in two colours (black/red). Full ASCII character set (caps & lower case) plus Greek symbols and accent characters. Box & switches not included.

Cat X-3240

Only \$99

Print Ribbon to suit Cat X-3241 \$5.50



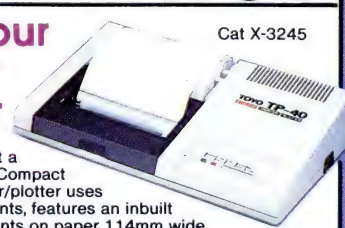
4 Colour Printer Plotter

Incredible performance at a bargain price! Compact 4-colour printer/plotter uses ball-pen elements, features an inbuilt micro itself! Prints on paper 114mm wide, with 64 character sizes in any of the 4 colours. Plots up to 480 steps in X direction, plus/minus 32768 steps in Y direction. Plots solid lines, dashed lines, points, draws graduated axes too. Controlled by software commands. Centronics-type interface.

WAS \$229 IN LAST YEAR'S CATALOGUE!!!

\$99

Paper Roll to suit Cat X-3246	\$3.80
Coloured Pen set to suit Cat X-3247	\$8.50
Black Pen set to suit Cat X-3248	\$7.95



Cat X-3245

PERIPHERALS PERIPHERALS



"Xidex" quality diskettes

Don't risk loss of valuable computer data by using 'economy' floppy disks—they could cost you a fortune! The new Xidex range of Precision disks offer a level of quality and reliability previously unknown. Better disk substrate, finer particles in the coating, ultra-smooth polishing, tighter tolerances and an extra 18 critical tests ensure that all disks easily exceed the ANSI specs for 96 TPI high density recording.

Single sided, double density HARD sector

Cat X-3505 **\$4.95** ea
Single sided, double density SOFT sector

Cat X-3510 **\$4.95** ea
BOX of 10 Single Sided, d/density SOFT/s

Cat X-3512 **\$54.50** box
BOX of 10 Double sided, d/density SOFT/s

Cat X-3514 **\$59.50** box

COMPUTER MAINTENANCE

Disk Head Cleaner

Protect that precious software. Comes with cleaning head and fluid. Fast and easy to use. Essential for the ongoing maintenance of your machine.
Cat X-3519

\$7.95

Disk Head Cleaning Kit

Pack of 10 disposable disks pre-treated with head cleaning solution, with Lexan re-usable jacket. Disposable cleaning disks means you know the job's done properly!
Cat X-3550

\$39.50

Computer Maintenance Kit

The complete wash, scrub and shine. Disposable head cleaning disks, video display cleaner, anti static spray and lint-free towelettes all neatly packed to give you a comprehensive maintenance kit for that valuable computer of yours.
Cat X-3552

\$59.50

Leda Anti-Static Pads

50 anti-static wet tissues in their own dispenser!
Cat X-3540

\$6.99

Lint-Free Computer Wipes

Large lint-free wipes for glass, acrylic and plastic.
Cat X-3542

\$4.95



DISK STORAGE FILES

Protect those valuable disks from loss or damage! You've spent perhaps days or even months collating that information and storing it on disk, just so you'll be able to call it up when you need it. While it's not being used keep it safe and clean in one of our fantastic storage files. All constructed of firm shock resistant plastic and designed for easy access. A must for any disk user!

1. Holds 40 disks for easy access and recognition.

Cat X-3530 **\$34.50**

2. Room for 30 disks in sturdy box for easy filing Cat X-3528 **\$13.95**

3. A neat binder for tier filing 10 disks for immediate access

Cat X-3525 **\$12.95**

4. Plastic case & lid holds 10 disks

Cat X-3515 **\$7.95**



TOUCH TABLET

Suits CAT

This elegantly styled, durable attachment enables you to produce graphics directly onto the screen. With the program supplied all you have to do is plug it in and draw (with the stylus provided). The image will be reproduced on the screen. You can now store your drawing or graphics on disk. Play games, draw pictures or geometric shapes. An ideal learning aid! Comes with program and comprehensive instructions.
Cat X-7580

\$79

PRINTER PAPER

Box standard width computer fan-fold paper (242mm wide). Cat X-1189 **\$36.50**

Box fan-fold paper to suit GP-80 printer Cat X-3254 **\$36.50**

DATA RECORDERS



Datasette

A cassette recorder specially designed for saving and loading computer programs and data! Fixed recording level for optimum recording, adjustable play level to let you load from cassettes recorded at different levels. Inbuilt tape counter, audio monitor with disable switch, motor control socket. Both 3.5mm sockets and 5-pin DIN socket for connection to computer. Uses four AA-size batteries or external 6V plug pack power supply.
Cat X-7206

M-9525 power pack supplied.

\$45



National Recorder

High quality mono recorder suitable for computer use to store your programs and data. 240V AC mains lead supplied or will run off 4 'C' sized batteries (not supplied). Features single touch record button and mechanical pause.
Cat A-4093

\$55

Cassette Cable

Universal cable suits IBM, Challenger, TRS-80, etc. 5-pin DIN to 2x 3.5mm & 1x 2.5mm phono.
Cat X-5000

\$2.95



Data Cassette

Famous 'Microsette' verified computer cassette tape. Five minutes per side, over 40K capacity each side.
Cat X-3502

\$2.49

Quickshot II Joystick

Quality joysticks to suit Atari, Commodore and other computers/TV games. New model is even better than the last one! Super responsive: gives you real control. Has standard 'D' plug connector. Cat Y-1498

\$24.95



SOFTWARE

olivetti

OLIBIZ STOCK/INVOICING CONTROL Maintains stock levels, sales figures and profitability by stock line. Value & cost of sales is also available.

Cat X-5272 \$395

OLIBIZ DEBTORS LEDGER Maintains customer accounts with details of invoices, credit notes, cash receipts and journal postings.

Cat X-5273 \$395

OLIBIZ CREDIT LEDGER Fully maintains customer accounts & records all transactions that affect those accounts.

Cat X-5274 \$395

OLIBIZ GENERAL LEDGER System maintains the private ledger, profit & loss and balance sheet.

Cat X-5275 \$395

OLIBIZ PAYROLL Will maintain standard pay files. Time sheets & pay slips are automatically generated, while holiday pay, etc can be entered where applicable.

Cat X-5276 \$395

MICROSOFT WORD The revolutionary program for all your word processing needs. Also includes 'Spell' and 'Merge'. Ideal for business notes & memos, letters or that novel. With its own reference guide if you need help.

Cat X-5257 \$495

MICROSOFT MULTIPLAN One of the most powerful and versatile electronic worksheets available! Ideal for business analysis & forecasting, project management or household and personal finances.

Cat X-5267 \$295

MICROSOFT CHART Turns complex data and ideas into easily understood, presentation quality charts.

Cat X-5268 \$395

LOTUS 123 Probably the most amazing, versatile and comprehensive business program available today!

Cat X-5265 \$749

CROSTALK Simply one of the best communications programs for PCs available today!

Cat X-5270 \$239

PERFECT WRITER Easy enough to help the first time user write more succinctly and powerful enough for professional editing.

Cat X-5255 \$345

PERFECT FILER Manage data like never before! Mailing lists, inventory lists, customer files, sales records.

Cat X-5262 \$295

SIDEKICK Can't find a calculator, notepad, appointment book? No matter what software you're running, just hit the button and a Sidekick window opens... a calculator, notepad, appointment calendar, auto dialler or ASCII table!

Cat X-8751 \$109

DATABASE III Latest version 16-bit limited ONLY by disk space! The STANDARD for data programs.

Cat X-5260 \$749

TURBO-PASCAL Why pay \$400-\$600 for a Pascal Compiler? For a fraction of the cost you could have Turbo Pascal with features that are outstanding!

Cat X-8749 \$109

FLIGHT SIMULATOR Put yourself in the pilot's seat and head for the skies!

Cat X-7652 \$89.95

CHALLENGER

LOTUS 123 Probably the most amazing, versatile and comprehensive business program available today!

Cat X-5265 \$749

MICROSOFT MULTIPLAN A powerful worksheet program! Ideal for business analysis and forecasting, project management or household and personal finances.

Cat X-5268 \$295

DATABASE 111 Latest version 16-bit limited ONLY by disk space! The STANDARD for data programs.

Cat X-5260 \$749

TURBO-PASCAL Why pay \$400-\$600 for a Pascal Compiler? For a fraction of the cost you could have Turbo Pascal with features that are outstanding!

Cat X-8749 \$109

Educational

TYPEQUICK Let your computer teach you how to touch type! A complete course in only 10 lessons.(Challenger only).

Cat X-8706 \$79.95

ALLIGATOR MIX Encourages children to practice basic addition and subtraction skills while playing an exciting, fast paced game.

Cat X-8700 \$54.95

DRAGON MIX Just like Alligator Mix only this time concentrates on multiplication and division.

Cat X-8702 \$54.95

FLIGHT SIMULATOR Put yourself in the pilot's seat and head for the skies!

Cat X-7652 \$89.95



Adventure & Arcade Games

CONQUEST Transcend the limits of time into a prehistoric era to assume your place as King of the Falcons.

Cat X-6853 \$54.95

ZORK-1 The definitive adventure game with monstrous scope. Venture through a cavernous underground complex- treasures, enchantment & more!

Cat X-8654 \$69.95

DEADLINE When you take on Deadline, you're putting yourself against a 12 hour time limit to solve one of the cleverest and most baffling cases in the detective game.

Cat X-8655 \$85.00

ULYSSES The king has assigned you the task of retrieving the legendary Golden Fleece. On your journey you will encounter the wicked 'Sirens', Cyclops, Pluto and the magnificent Pegasus.

Cat X-8662 \$67.50



Business/Utilities

Z80 & CPM DISK & MANUAL -Turns your CAT into a Z80 processor - gives you access to the enormous range of CPM software!

X-7570 \$395.00

VISCALC -The powerful electronic spreadsheet that can calculate and display the answers to involved problems you could have spent hours doing by hand. Easy to learn, easy to use.

X-7600 \$490.00

SANDY WORD PROCESSOR -A version specially written for the CAT computer, taking advantage of the function keys and 80 column screen.

X-7605 \$189.00

PFS FILE -An easy-to-use information management package that allows you to record, retrieve, and review information in a fraction of the time it would take with a conventional filing system.

X-7610 \$195.00

HOW TO PROGRAM IN APPLESOFT™ BASIC -using these 12 self-paced lessons you will learn to program in the popular BASIC computer language. Learn BASIC in two nights or two months! Unique 'Let's Talk' feature allows easy review of prior material or skips to new lessons.

X-7658 \$74.95

BASIC FOR BEGINNERS -An excellent introduction to BASIC for those with no previous programming experience.

X-7660 \$27.50

Educational

FLIGHT SIMULATOR -Simulates flight in a single-engine aircraft. Very similar to Challenger Microsoft Flight Simulator.

X-7652 \$89.95

ALGEBRATACK -Kids learn the fun way by playing this arcade-style game. Makes you wish you were starting again!

X-7661 \$27.50

ARITHMATACK -As above but for arithmetic.

X-7662 \$27.50

FRACTION-ACTION -As above but for fractions.

X-7663 \$27.50

Adventure & Arcade Games

REACH FOR THE STARS -A fast-paced exciting challenge for up to four players. Three levels of play. Expand and develop your empire, but watch for other empires - they may wipe you out!

X-7700 \$39.95

ZAXXON -(Official version) - The arcade game you must see to believe. Pilot your aircraft through 3-dimension-like battlefield complete with enemy aircraft, fuel tanks, concealed missiles and tanks.

X-7702 \$69.95

SUSPENDED -In cryogenic suspension for half a millennium, you are woken up to deal with an emergency. Strategically manipulate six robots, each having a distinct perception of the world to solve a myriad of realistic and original problems!

X-7704 \$84.95

CARRIERS AT WAR You command the land-based and/or naval components of either nationality in any one of five historical scenarios. Play against the computer or a friend.

X-7722 \$54.95

VZ-300/200

Business/Utilities

Hex Utilities (8K) X-7280 \$13.95

Word Processor (24K) X-7281 \$29.95

Editor Assembler (24K) X-7282 \$22.95

Statistics 1 (8K) X-7251 \$13.95

Statistics 2 (24K) X-7252 \$13.95

Mailing List (24K) X-7259 \$13.95

Biorythm (24K) X-7237 \$ 9.50

Disassembler (24K) X-7278 \$13.95

Educational

Matrix (24K) X-7253 \$13.95

Intro to Basic (24K) X-7255 \$13.95

Speed Reading (24K) X-7257 \$13.95

Typing Teacher (8K) X-7258 \$13.95

Music Writer (24K) X-7276 \$13.95

Spelloomatic 1+2 (8K) X-7285 \$13.95

Spelloomatic 3+4 (8K) X-7286 \$13.95

Flashcard 1+2 (8K) X-7287 \$13.95

Flashcard 3+4 (8K) X-7288 \$13.95

Metric Spycatcher (8K) X-7289 \$13.95

Whizkid Spycatcher (8K) X-7290 \$13.95

Adventure & Arcade Games

Horse Racing (24K) X-7238 \$ 9.50

VZ Invaders (8K) X-7239 \$ 9.50

Dynasty Derby (24K) X-7240 \$ 9.50

VZ Ghost Hunt (8K) X-7242 \$13.95

Hoppy (24K) X-7243 \$13.95

Super Snake (24K) X-7244 \$13.95

Knights/Dragons (8K) X-7245 \$13.95

Star Blaster (24K) X-7247 \$13.95

Asteroids (24K) X-7248 \$13.95

Golf/Tennis (24K) X-7254 \$ 9.50

Tennis (24K) X-7264 \$13.95

Checker (24K) X-7265 \$13.95

Planet Patrol (24K) X-7266 \$13.95

Ladder Challenge (8K) X-7268 \$13.95

VZ Panic (8K) X-7270 \$13.95

Othello (8K) X-7271 \$13.95

Dracula Castle (24K) X-7272 \$13.95

Backgammon (8K) X-7273 \$13.95

Killer Tomato (24K) X-7274 \$13.95

Chess (8K) X-7275 \$13.95

Duel (24K) X-7279 \$13.95

Matchbox (24K) X-7231 \$ 9.50

Poker (8K) X-7232 \$ 9.50

Hangman (24K) X-7233 \$ 9.50

Slot Machine (8K) X-7234 \$ 9.50

Blackjack (24K) X-7235 \$ 9.50

Circus (8K) X-7236 \$ 9.50

AQUARIUS

Cartridge Software

Night Stalker X-6050 \$24.95

Snafu X-6051 \$24.95

Astrosplash X-6052 \$24.95

Utopia X-6053 \$24.95

Melody Chase X-6054 \$24.95

Advanced D & D X-6055 \$24.95

Tron Deadly Disk X-6056 \$24.95

Space Speller X-6057 \$24.95

Burgertime X-6058 \$24.95

MS Extended Basic X-6070 \$24.95

Logo X-6075 \$24.95

Cassette Software

3D Battlezone X-6100 \$ 9.95

D-Fenders X-6101 \$ 9.95

Chuckman X-6102 \$ 9.95

Breakout X-6103 \$ 9.95

Millipede X-6104 \$ 9.95

Ed-On X-6105 \$ 9.95

Games Pack 1 X-6106 \$ 9.95

Games Pack 3 X-6107 \$ 9.95

Ghost Hunter X-6108 \$ 9.95

Space Ram X-6109 \$ 9.95

Invaders X-6110 \$ 9.95

Maths Amarda X-6200 \$ 9.95

Read It X-6201 \$ 9.95

Spell It X-6202 \$ 9.95

Chess X-6203 \$ 9.95

CALCULATORS CALCULATOR

TEXAS INSTRUMENTS

Calculator, Ruler & Clock: all in one!

What a great gift idea! 25cm ruler has inbuilt quartz digital clock plus a handy memory calculator with LCD display, square root key, etc. Just what every school student needs: and the calculator is the type most teachers recommend for young students.



• Quartz clock for accuracy

Cat Y-1057

\$14⁹⁵

Ideal for school, home, office or workbench!

TI-30 III LCD Constant memory

Texas Instruments packs more into this budget priced scientific calculator than most other manufacturers do at twice the price! From elementary arithmetic, through the most complicated calculations this feature machine handles the lot!

Features:

- Easy to read 8 digit Liquid Crystal Display.
- AOS Algebraic operating system allows you to enter mathematical sequences in the same order that they are algebraically stated.
- Constant memory feature holds numbers in a user memory even while the calculator is turned off!
- APD Automatic Power Down provides for special power-saving features. The calculator turns itself off completely, after a period of non-use.

Cat Q-3738

\$29⁹⁵

The Business Analyst MK II

This amazing calculator will - at the touch of a button - take the drudgery out of many complex calculations that businesses are faced with every day. It is also LCD memory calculator with auto power down, scientific notation and constant memory.

FEATURES:

- Sales tax and price.
- Monthly payment for mortgages.
- Present value of lease without residue.
- Solving for APR.
- Payment amount for sinking fund.
- Forecasting with linear regression analysis.
- Finding yield to maturity on a commercial bond.
- Future value of a series of equal deposits.
- and much, much more!!

Cat Q-3785

\$57

PW-61 Superslim plus time

The perfect pocket size! Time display showing hours, minutes and seconds. PLUS all the basic arithmetic functions with memory, square roots and percentages in a unit that takes up next to no space at all. Features; 8 digit display. Floating decimal point. Overflow check and LCD for long battery life and easy to read display. Ideal for anyone who needs to make quick calculations while they're on the move!

Cat Q-3040

\$14⁹⁵



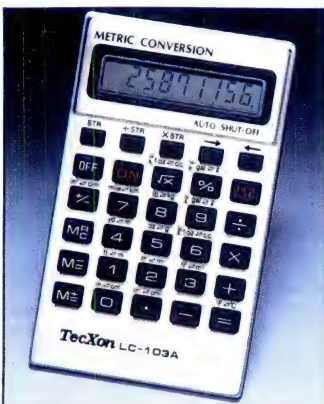
Solar-Powered Desk top Calculator

You need your calculator: but what do you know - the batteries are FLAT! This amazing solar powered calculator never needs a battery change. Features; Memory functions. Additions, subtraction, multiplication, & division. Plus percentage and square-root. Large surface and keys for mistakeproof operation. Slanted LCD display for quick, convenient readings.

NEW FOR 85

\$19⁹⁵

Cat Q-3035



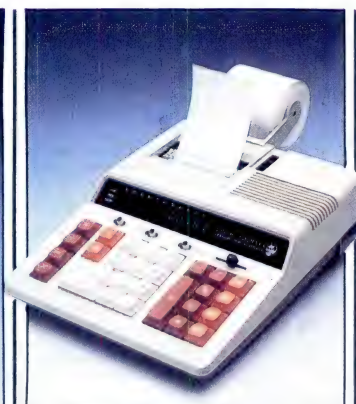
Metric Conversion

Metrics still a problem? Well, here is the calculator that takes the hardship out of metric conversions. This pocket sized LCD machine also does the normal functions: addition, subtraction, multiplication, division, percentages and memory too! Gallons to litres, inches to millimetres, miles to kilometres, square feet to square metres, and that's just the beginning. Converts imperial to Metric and vice versa!

- Metric conversion functions
- Memory calculations, constant calculations, chain calculations, percentage calculations.
- Algebraic mode operation.
- Leading zero suppression.
- Very low power consumption and auto shut off.
- Constant memory

Cat Q-3025

\$22⁵⁰



Printer/Calculator

MAINS OPERATED

A compact desk-top calculator with print or no-print function. This mains operated model is designed to afford the most efficient, simplest method of performing the broadest range of calculations!

- One memory function.
- Automatic motor shut-off system.
- Large easy to operate keyboard.
- Large easy to read 10 digit green display.
- Nonprint function uses less paper.
- Automatic constant.
- Floating and fixed decimal point.
- Uses standard non-thermal paper.
- 240 Volt Power Supply.

Cat Q-3018

\$109

PAPER ROLLS TO SUIT 90¢ A ROLL
Cat Q-3017



Super-Slim LCD

You'll get used to having one of these delightful calculators in your pocket. Can be used in the home, office, factory, field or supermarket. You'll soon wonder how you ever did without a calculator. Beautifully made and ultra slim - you'll be proud every time you use your calculator. Supplied complete with batteries and instructions on use.

Cat Q-3022

A TINY

\$11⁵⁰

Calculator Batteries

3 volt Lithium calculator batteries in two popular sizes. Suit a large range of scientific and statistical calculators. Blister packed for freshness.

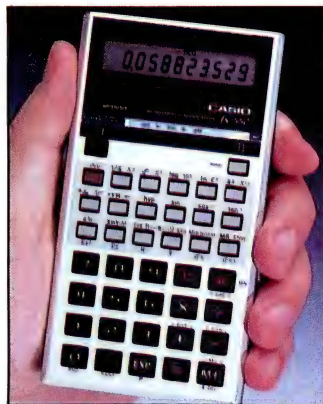
E-CR2025 Cat S-3330

E-CR2032 Cat S-3331

\$3⁴⁵

CALCULATORS

CASIO



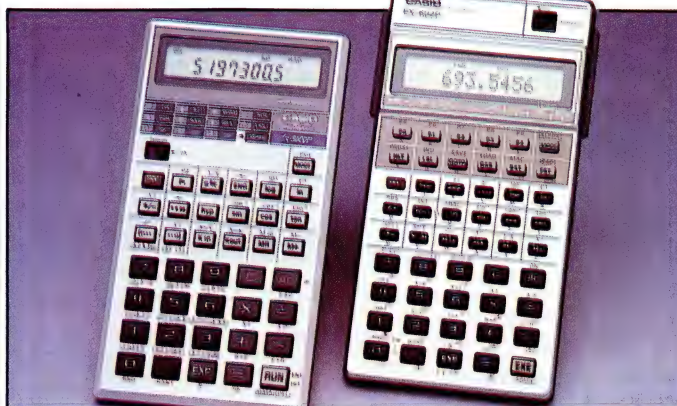
FX-550 Scientific

Most schools and colleges now allow calculators to be used in the classroom. And the one recommended is this Casio FX-550. Ideal for all levels from beginners requiring basic four functions and memory up to advanced high school, tech & university level with statistics and trig functions. Complete with protective wallet and full instructions. Cat Q-3100

Features:

- Scientific notation with 8 digit mantissa and 2 digit exponent up to 10 to power +/-99.
- 6 levels of parentheses
- Amazing accuracy
- Auto power off with memory retention

\$42⁵⁰



FX-3600P Scientific

A superb addition to our range. This Casio FX-3600P scientific calculator has the added advantage of simple programmability, plus integrals! It has up to 38 step programming capacity, with integrals, regression analysis and 7 memories. It's the ideal calculator for tech & university students (advanced high school students as well), engineers, technicians, laboratory workers, etc. With a 10 digit mantissa and two digit exponent, it's ready to handle just about anything you can give it! Liquid Crystal Display, with up to 1300 hours battery life. Comes complete with wallet and instructions! Cat Q-3105

\$62⁵⁰

FX-602P Advanced

Programmable scientific calculator for senior high school and university use. Particularly geared to engineering, higher mathematics, physics, space sciences, etc. Extra thin, pocket-sized unit with an alpha numeric display is capable of performing ordinary step-by-step and programmed calculations, computing values of 50 different functions.

- 88 memories, up to 512 steps
- Full memory retention
- Full alpha-numeric LCD display

Cat Q-3110

\$139



Cassette Interface

Store data, programs, etc. on a standard cassette recorder with this interface unit. Matches the FX-602P & 702. Cat Q-3125

VALUE!
ONLY

\$49



Add-on Printer Unit

Add-on printer unit for the FX-602P & 702, for storing data, programs, etc. in hard copy form. Cat Q-3127

ONLY \$99

Paper to suit Printer Cat Q-3128 (pack of 5) **\$7⁹⁵**

SHARP



Student Pack

The perfect set for the student in years 7 to 9. With the famous Sharp EL-531 scientific calculator and all the features the mid-secondary student will need. Features include: Scientific functions. Statistics. 3 key memory. 34 Preprogrammed mathematical functions. Mantissa recall. 15 levels of parentheses and 4 levels of pending operations. PLUS at no extra cost - 1 stapler, eraser, clutch pencil and micro-pen. Great gift value. Cat Q-3815

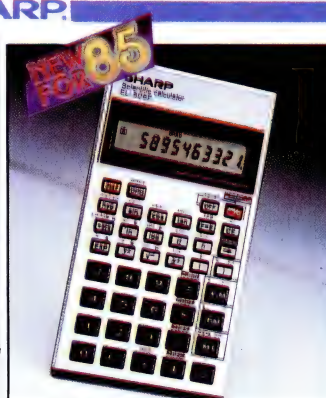
\$24⁹⁵



School time Pack

Ideal for the late primary early secondary student! Contains the famous Sharp EL230 calculator with all the basic functions the kids will need on a spacious keyboard and display which reduces errors and makes learning to operate easy. Features: Multiplication, addition, division & subtraction. Percentage & square-root. 4 key memory function. LCD for clear easy to read display and long battery life. Auto power-off. PLUS! 1 x 150 mm ruler, protractor, eraser and 2 Noris pens. All for the one amazing price! Cat Q-3810

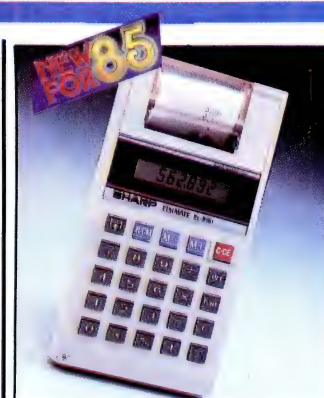
\$12⁹⁵



EL 506P

Now, for the computer engineer and programmer a calculator that handles Binary, Octal and Hexadecimal numbers at the push of a button! Including scientific and statistical functions. You've been waiting for this for a long time and here it is! Features Scientific functions with direct formula entry so calculations can be entered as they are written for fewer mistakes. Binary, Octal and Hexadecimal calculations. Complex number calculations for absolute values, deviation & vectors. Preprogrammed for 56 functions. Statistics. 42 multifunction keys. ALL in a pocket sized calculator. Cat Q-3805

\$37



EL 8180

Ideal for the traveller, family shopper or anyone who needs to keep a record of prices or transactions! Easy to read LCD display. All basic mathematical functions and three key memory. Print or non-print mode to save power and paper. Paper advance. Runs on three penlight batteries for easy replacement. Fantastic value price for a PRINT calculator that can be carried around in your pocket! Cat Q-3800

\$39⁹⁵

Paper to suit \$230 Pack of 5 Cat Q-3802

AUDIO & HI FI AUDIO & HI FI

NEW FOR 85

NEW FOR 85

AM/FM Radio Cassettes



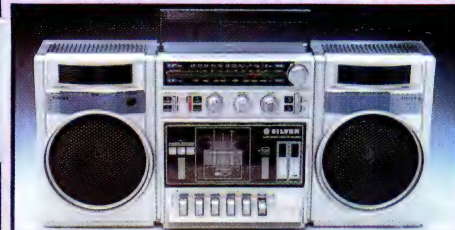
Stereo AM and FM Tuner

Now that they've got it... We've got it... And so can you! Doesn't matter if you're an avid AM listener (it works in the afternoon as well) or an FM buff, now you can enjoy full stereo on both bands. This famous TEAC brand stereo tuner is superbly styled and delightfully simple to operate. Now, EXCLUSIVE to Dick Smith, it features improved AM quality with the addition of STEREO sound! It even has built-in recording calibration tone to give you distortion-free tapes!

- ★ 75dB FM S/N ratio (mono)
 - ★ 400uV/m usable AM sensitivity
- Cat A-1515

**AT LAST!
TRUE AM
STEREO JUST**

\$299



2 Band

Looks great! This quality portable radio cassette, AM/FM tuner features superb sound reproduction. With separate tone, balance & volume controls, auto stop, & level indicator, control is at your fingertips. AC/DC operation. Cat A-4026

\$125



4 Band Dual Cassettes

What more could you get in a portable player? FM/MW/SW1/SW2 bands and TWO cassette facilities. Exciting hifi sound reproduction! This unit features dubbing, high/low tone controls, auto stop, LED indicators and mic & phones jacks. Incredible value for a unit that allows so much flexibility. Cat A-4028

\$199



Detachable Speakers

A portable cassette radio that offers the true dimensions of stereo! Detachable speakers allow a flexibility not normally available with portable players. Features AM/FM radio, separate bass high/low - treble high/low, left & right volume controls, LED level display, AC/DC operation. Exceptional value!

Cat A-4035

\$129



AC/DC Mono

Amazing value! Light weight portable built for ease of operation and durability. Features auto stop, built-in condenser mic, monitor switch, high/low tone control and AC/DC operation (plug and cord supplied). Only 1.4Kg, so it's not a load to carry. Cat A-4025

\$45

Great Sound Bookshelf Speakers

The old speaker looking battered, sound almost inaudible? Here's some amazing value, high quality bookshelf speakers that'll be the envy of your friends! Constructed of 20mm teak-look finish timber with black-cloth removable speaker grilles. Rated at 80W RMS these will give all the performance you'll ever need. Check these outstanding specifications! 165mm high power woofer with high efficiency soft dome tweeter. 80W rms (yes that's rms) handling! Freq. range - 45 to 20000Hz. Sensitivity - 89dB. Dimensions - 370h x 260w x 234d mm. Weight 17Kgs/pair. Sensational value! Cat C-2250

\$249 PAIR



Bargain Belt Drives

Records a bit slow? Most of your music taking on the Chipmunks sound? Try this top quality belt drive turntable. Fully automatic 240V model which includes record size selector, anti skate and weight adjustment. PLUS superior ADC magnetic cartridge. Ideal replacement for that old rim drive! Cat A-3010

BSR QUALITY

\$59

Kids giving your turntable a hard time? Why not get a second one just so they can use it. This ECONOMY 12V belt drive is ideal as a second unit (or even a first one!). Complete with electronic speed control and quality magnetic cartridge. Great for dubbing! Fantastic value! Cat A-3015

\$27⁵⁰

AUDIO & HI FI AUDIO & HI FI



1. AM/FM Stereo Cassette

The go anywhere stereo cassette with metal tape capability! Crisp sound quality from the lightweight 'phones. Dual phone sockets so you can listen with a friend. Bargain value!

Cat A-4015

\$79

2. Auto Reverse Stereo Cassette

Say goodbye to tape changing! This AUTO reverse cassette plays the other side for you. Includes superb quality 'phones. All this freedom and quality at a basement price!

Cat A-4060

\$79

3. Stereo Cassette Player

A stereo cassette with all the features you're likely to need. Complete with adjustable headphones giving amazing sound reproduction. Save heaps at this price!

Cat A-4051

\$55

4. Budget Stereo Cassette

Has to be one of the best priced cassettes around! Comes complete with great sounding 'phones. Features sliding volume control and belt clip. Affordable quality!

Cat A-4053

\$34⁵⁰

5. Go-anywhere Note Taker

Try this beauty! No phones needed. Ideal for students, executives, etc. Features inbuilt condenser mic and review button so you can quickly check what you just recorded.

Cat A-4050

\$54⁹⁵

6. Mini AM/FM Stereo Radio

Just like a miniature ghetto blaster! An attractive slimline stereo radio with dual speakers, telescopic aerial, FM stereo indicator & carry strap. Plus a pair of super lightweight headphones. All at a fantastic price!

Cat A-4375

\$39⁹⁵

7. Personal AM/FM Stereo

Fantastic sound! This AM/FM stereo radio comes complete with famous quality Mylar headphones. Compact and lightweight it's easy to move around with you. Great '85 price!

Cat A-4001

\$34⁹⁵

8. AM/FM Mini Radio

Listen to the cricket at the beach or the footy in the bush! This mini radio features LED indicator, telescopic antenna, carry strap and earphone. Amazing value!

Cat A-4367

\$15⁹⁵



Mini Amplifier

Mini amplifier for walkie stereos, radios, etc - gives you full stereo performance with huge 1.5W peak output! Battery operated power amplifier has high/low filters, LED level displays. Mini speakers have really great sound. What a beauty!

Cat A-4020

\$79



AM/FM Stereo Headphone Radio

It's all on your head! The radio is actually built **inside** the phones - so you haven't got to worry about where to wear the radio. A top little number in nudist colonies! (but where do they keep their money & keys?) And you can even use them as ordinary headphones for your Walkie

Cassette, etc!

Cat A-4335

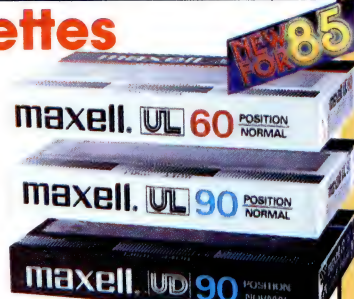
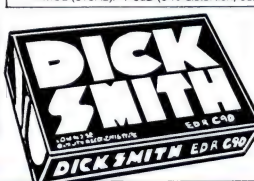
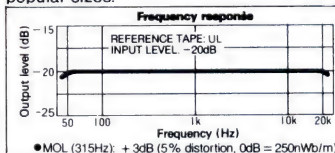
\$39⁹⁵

Cassettes

Top quality Maxell Tapes

Famous Maxell Audio Recording Tapes: world renowned by hi-fi and music buffs as top quality, top performance. And now they're available at your nearest Dick Smith Electronics store!

Choice of UL or UD types, in the two most popular sizes.



C60UL Cat C-3060 **\$2.80** 10 or more **\$2.60**
C90UL Cat C-3062 **\$3.90** 10 or more **\$3.60**
C90UD Cat C-3066 **\$4.99** 10 or more **\$4.50**

Dick Smith Extended Dynamic Range

You'll be amazed at the high quality for such low, low price. Dick Smith Electronics audio cassettes are manufactured in Australia to meet exacting standards. Try them once: you'll be back for more!

C90EDR Cat C-3354 **\$2⁵⁰** 10 or more **\$2.00**

Accessories for your sound gear

Wet Walkie? Water Resistant Carry Bag

Anyone who owns a Walkman or other Walkie-type stereo or AM/FM radio knows the hassles: get them wet and they tend to stop. Bad news if you like sailing. Fishing. Or just mucking around near water. Solve the problem with this water resistant carry bag. Repels H₂O (and beer, wine & other goodies) and protects your set. Cat A-4010



\$11⁹⁵

Head Cleaning Tape

Tapes sounding noisy? Try one of these great value head cleaning tapes. The difference will surprise you. Clean heads prevent wear on your tapes and keeps your system sounding like new.

Cat C-7098

Cassette Storage

A deluxe vinyl cassette case which will protect your valuable cassettes. It's ideal for the sound enthusiast on the move - holds up to 10 cassettes in their cases: more without cases.



Cat C-3810

\$4⁹⁵

Head Demagnetiser

Ideal for all tape recorders (NOT suitable for video cassette recorders!) It simply plugs into the 240V AC mains, and is held near the head and drawn away slowly to demagnetise it thoroughly. Most tape head should be demagnetised after every 5-10 hours of use: if you don't, your sound quality can suffer considerably as well as damage your recordings. Full instructions supplied with the demagnetiser.

Cat C-7222

\$9⁵⁰



7-way Speaker Switch

Stereo selector switch enables you to select any combination of three sets of remote speakers. Terrific for when you have parties in more than one room. Attractive brushed gold finish steel wall plate fits any standard electrical box outlet. Cat C-7208

\$11⁹⁵

Carbon fibre record cleaning brush

Space age carbon fibre brush gives your records the sparking clean treatment they need for long life and pure music.

Cat C-7096

\$9⁷⁵



Audio Adaptor leads

6.5mm SOCKET TO 3.5mm PLUG Cat P-6510	\$1.25
(10 up \$1.00)	
3.5mm STEREO SOCKET TO 6.5mm STEREO PLUG Cat P-6500	\$1.25
(10 up \$1.00)	
6.5mm STEREO SOCKET TO 3.5mm PLUG Cat P-6570	\$1.25
(10 up \$1.00)	
6.5mm STEREO SOCKET TO 6.5mm PLUG Cat P-6580	\$1.25
(10 up \$1.00)	
3.5mm STEREO SOCKET TO 3.5mm PLUG Cat P-6600	\$1.25
(10 up \$1.00)	
RCA SOCKET TO 6.5mm PLUG Cat P-6530	\$1.25
(10 up \$1.00)	
6.5mm SOCKET TO RCA PLUG Cat P-6550	\$1.25
(10 up \$1.00)	
3.5mm SOCKET TO RCA PLUG Cat P-6540	\$1.25
(10 up \$1.00)	
RCA SOCKET TO 3.5mm PLUG Cat P-6560	\$1.25
(10 up \$1.00)	
6.5mm STEREO SOCKET TO 3.5mm STEREO PLUG Cat P-6505	\$1.25
(10 up \$1.00)	
3.5mm SOCKET TO 6.5mm PLUG Cat P-6520	\$1.25
(10 up \$1.00)	
2 x 3.5mm STEREO PLUGS TO 1 x 3.5mm STEREO PLUG Cat P-6525	\$3.50
(10 up \$3.20)	

Audio Plugs and Sockets

5 pin DIN plug to 5 pin DIN plug. Cat W-1010	\$3.95
5 pin DIN plug to 2 x 3.5mm plug. Cat W-1050	\$4.25
5 pin DIN plug to 4 x RCA plug. Cat W-1040	\$5.45
1 x RCA plug to 1 x RCA plug. Cat W-1070	\$2.00
4 x RCA plugs to 4 x RCA plugs. Cat W-1060	\$6.50
1 x RCA plug to 1 x 3.5mm plug. Cat W-1080	\$2.20
2 x RCA plugs to 2 x RCA plugs. Cat W-1180	\$4.25
2 x RCA plugs to 1 x 3.5mm plug. Cat W-1250	\$4.25
1 x RCA plug to 1 x RCA socket. Cat W-1280	\$2.00
1 x 3.5mm plug to 1 x 3.5mm line socket. Cat W-1150	\$2.50
1 x 3.5mm Stereo plug to 1 x 3.5mm Stereo socket. Cat W-1160	\$2.50
1 x 3.5mm plug to 1 x 3.5mm plug. Cat W-1090	\$1.75
1 x 6.5mm plug to 1 x 6.5mm plug, (coiled lead). Cat W-1110	\$5.50
4 metres coiled lead with 6.5mm stereo plug to 6.5mm stereo socket. Cat W-1120	\$5.50

THE DSE RANGE OF TOP QUALITY HEADPHONES: VALUE & PERFORMANCE!



Top of the range!

Ultra light, precision made headphones! Giving astounding sound reproduction at 8 ohms impedance, 18 to 20,000 Hz range. Complete with lead and 6.5mm plug. Quality at the right price.
Cat C-4124

\$39⁵⁰



Famous "Sennheiser"

One of the world's leading audio manufacturers. These amazing light weight 'phones feature superb sound quality and weight just 60g. Adjustable to all sizes & complete with lead and plug.
Cat C-4120

\$31⁹⁵



Separate volume controls

Quality Mylar phones giving superb performance with separate volume controls for music as you like it. Wide, adjustable band for maximum comfort.
Cat C-4105

\$22⁵⁰



Fold-away headphones

The ultimate convenience! Fantastic quality headphones to suit most portable players. Lightweight for comfort, these fold away to fit in your pocket when you want some peace and quiet.
Cat C-4100

\$22⁵⁰



Low cost, light weight!

Perfect for the walkie or miniature radio! Complete with 3.5mm plug and AT NO EXTRA COST there's a 6.5mm adaptor so you can plug into the home hi-fi. Great sound better value!
Cat C-4106

\$12⁵⁰



Magnetic headphones

Old style 2k magnetic mono headphones. Just the thing for the old grandad crystal radio sets. Not like the new ones, all metal construction.
Cat C-4000

\$12⁵⁰



Stereo ear-plug phones

Ideal for joggers, sportsmen or anyone on the move! Fits neatly into the ear without headband. Fantastic sound quality! Comes with spare ear pads, 1.2m cord and 6.5/3.5mm plugs.
Only 4.8g without cord.
Cat C-4095

\$11⁵⁰



Unbeatable Price!

Quality Mylar phones for less than 10 bucks! Perfect for the Kids' stereo, lightweight and comfortable. With lead and 6.5mm plug to suit most headphone sockets.
Cat C-4101

\$9⁵⁰

Top quality Speakers



300mm WOOFER

The Big Guns! These enormous woofers with specially designed ribbed cones can handle just about anything. Features: a huge 30W, frequency range - 35 to 5000Hz with a magnet weight of 560g and measuring 300 x 60 x 20mm.
Cat C-2245

\$59⁹⁵



200mm WIDE RANGE

Speakers need replacing? These beautifully finished speakers with pressed mild steel mounting assembly may be just what you need. Features include: 8 ohm impedance, frequency response - 40Hz to 8000Hz, power - 15W and magnet weight of 280g.
Cat C-2240

\$24⁹⁵



120mm MID-RANGE

Sounding a bit hollow? A midrange speaker may be what's needed. Add some depth to the sound of the system. These are great value speakers with a frequency range of 780-1400Hz and an 85g magnet. Suitable for 30W systems. Featuring the same diecast mount and ribbed cones these are great value!
Cat C-2235

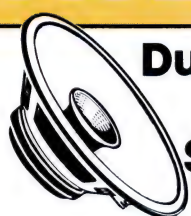
\$14⁹⁵



77mm TWEETER

Hear the top end! A great performing tweeter beautifully designed and manufactured. Frequency response of 1700-19000Hz and a 55g magnet. Suitable for 30W systems. A quality tweeter at a fantastic price!
Cat C-2230

\$9⁹⁵



Dual Cone 200mm \$14.50

An ideal speaker for the smallest enclosures or PA work. You can even wire them in series and parallel for the really big PA jobs! This is a dual cone speaker which allows for a greater frequency range than the more conventional single cone speakers. Typically the frequency range of this speaker is 30Hz to 18kHz. The speaker has a heavy duty magnet and comes as a dual impedance speaker, 4 and 8 ohms, making it ideal for all jobs including car stereo systems. The heavy magnet coupled to the free edge suspension design allows for greater excursions of the cone under heavy audio passages.
Cat C-2012



200mm Air Suspension with Aluminium Voice Coil

Huge 450g magnet!

What a thumper! Powerful high compliance air suspension dual cone speaker with aluminium voice coil. Dual impedance of 4 and 8 ohms for almost any requirement. This is an amazingly powerful speaker but is also pleasant in response. Can be used in bookshelf systems or in PA systems. It is rated at 30 watts with a free air resonance of around 35Hz. This speaker is so compliant that you could see the cone move up to 13mm on heavy audio passages.
Cat C-2100

**AMAZING
VALUE!** \$27.50

Hi Power L-Pad

Constant impedance. 15w continuous-30 peak. Mono use 8 ohms impedance. Ideal for controlling higher powered speaker placed outside (eg. for the BBQ or in a large play room). Can be mounted on a remote panel or in the speaker cabinet. Complete with instructions. Ideal for tweeter control.

\$7.50

Cat C-7204

Stereo L-Pad

Controls audio level (attenuation 30dB to 0.5dB) while maintaining constant impedance matching between amplifier and remote speakers to ensure distortion free power transfer. Panel or speaker enclosure mounting. Essential for correct installation of remote speakers. Medium power rating into 8 ohms. Complete with instructions.

\$9.50

Cat C-7205

High & Midrange level controls

Whether you have ready built speakers, or you're making your own speakers, these faders will give you the control you need over the sound from your system. Dual concentric, heavy duty wire wound elements ensure proper loading of the crossover and amplifier at all times.

●High power handling capacity ●Attractive & easy to mount ●Latest flush design ●Fully sealed front and back-no air leaks! ●±2dB calibration markings ●Available with either high or midrange labels.

Midrange
C-7210
Highrange
C-7212

\$9.00



2 way Crossover Networks 3 way

Impedance of 8 ohms and a crossover frequency of approximately 3kHz. The special inductor/capacitor circuit ensures good cross over characteristics. Can be used in your own designs for a two way speaker system.
Cat C-2512

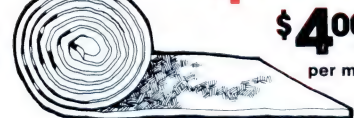
As used in the Playmaster 3/70L, 3/53L and 3/26L speaker systems. Has 8 ohm impedance. Two inductor network with non-polarised capacitors. Crossover frequencies of 1.5kHz and 5kHz plus high power handling capacity. This unit may be used in conjunction with Faders C-7210 and C-7212.

\$14.50

Cat C-2513



Speaker Box Lining



\$4.00
per mtr

Innerbond is light, clean, dust-free and easy to handle. Fibre bonding ensures that this cellulose acetate insulation will remain resilient and not fracture or break down due to vibration. Weighs approximately 300 grams/sq. metre and is 25mm thick by 700mm wide - this is recommended density for most speaker usage.

Cat C-2662 20m or more \$3.50m



Magnetic Earpiece
For radios, tape recorders, etc. Magnetic 8 ohm earpiece with 3.5mm plug, as used extensively in tape recorders, radios, etc. Ultra-thin cord for non-tangle use.
Cat C-2760 10 up \$1.00

\$1.25

Crystal Earpiece For crystal sets
Crystal high impedance earpiece with 3.5mm plug. Lightweight and extremely effective for crystal sets or monitoring for any high impedance output. Top quality.
Cat C-2765 10 up \$1.80

\$2.00

Quality low priced Speakers 300mm Woofer

This top of the line, enormously powerful 80 watt (max.) speaker offers superb reproduction of bass notes. The heart of a truly great speaker system!

Features: ● 80 watts maximum power handling ● Acoustic suspension design driver with a free air resonance of 35Hz ● 8 ohms impedance.

\$49.50

Cat C-2022



250mm Woofer

Can be used in conjunction with other speakers on this page to construct a great speaker system... or it can be used as a replacement speaker for that tired old system!

Features: ● 60 watts maximum power handling ● Free edge design ● 8 ohms impedance ● 35Hz free air resonance ● Capable of massive cone excursions without polling!

\$42.50

Cat C-2024



125mm Mid Range

A very smooth mid range speaker for the quality conscious. This speaker is very important to any system as it fills the gap left between the woofer & the tweeter. Modern design rear of speaker is enclosed! Therefore there is no need for a separate mid range enclosure in the cabinet. This unit can handle high power.

\$17.50

Cat C-2028

64mm Tweeter

ONLY

\$12.50

Features an aluminium dome directly over the voice coil so that high frequencies can be reproduced more efficiently - especially those between 15 and 20kHz. A stiff curvilinear cone transducer handles lower frequencies down to 2kHz! Impedance is 8 ohms.



Cat C-2032

25mm Dome Tweeter

A superb dome tweeter that can be used as replacement in many systems. The dome principle allows for an extra wide dispersion of high frequencies right up to the 20kHz region. The power handling rating of the speaker is in the region of 50 watts maximum, which makes it ideal for use with the Playmaster speaker systems in place of the conventional speaker supplied. The response of this unit is very smooth over the entire upper audio frequencies. Mounting is via four screws.

\$18.50

Cat C-2004



Piezo Ceramic Tweeter

This superb piezo-ceramic tweeter is an ideal replacement tweeter. Handles up to 40 watts continuous. Frequency response from 5kHz to 27kHz! Suits all 8 ohm systems. Can be used with or without crossover. Add these to your system and you'll notice the difference!

\$14.50

Cat C-2005



PCT 2000 Piezo super Tweeter

A high performance tweeter of exceptional quality! Fully enclosed and complete with removable stand and spring loaded connector terminals Superb features! Handles 75W. Offers high impedance: 1200 ohms/1KHz & 40 ohms/40KHz. Frequency response 3500Hz to 40000Hz. Efficiency 90dB/1W at 1m. Cat C-2007

\$16.95



57mm Mini Speaker

If it's performance you want, this 57mm mini speaker has it - in fact we found that it offered more performance than speakers up to 75mm in diameter! Nominal impedance of 8 ohms makes it ideal for many purposes.
Cat C-2222 10 up \$1.80

\$1.99



Economy Grille

Here's a high impact, 200mm plastic grille that has thousands of uses! If you want to place speakers into the wall or ceiling of your home then this grille makes an ideal cover. Also ideal on boats and in vehicles. Has four screw hole fitting points.

\$3.50

Cat C-2646
10 up \$3.00



AUDIO/MICROPHONES

**Professional quality:
low, low DSE prices**

Uni-Directional Dynamic 500ohm

**Freq. response
50—15kHz**



Top of the range professional quality microphone at a fantastic price. Famous name AOI brand compares with others you'd pay up to 3 times the price for. Solidly constructed to suit stage applications. Balanced output—compatible to suit all professional recording equipment, complete with professional 'Cannon' type connectors at mic end. Uses dynamic insert for more prominent mid-range and high response. An excellent mic for vocal use.

Specifications: ● 500 ohm impedance (unbalanced at plug end) ● Freq. response 30—18kHz ● Sensitivity—64dB at 1kHz ● 6 metre cable, battery and mic holder supplied.

**ONLY
\$59⁵⁰**

Cat C-1050

Uni-Directional Electret 600ohm

**Freq. response
30-18kHz**



Another professional quality microphone very similar to the above model (Cat C-1050) except this one uses an electret insert for an extended low range. Excellent for musical instrument use.

Specifications: ● 600 ohm impedance (unbalanced at plug end) ● Freq. response 30—18kHz ● Sensitivity—64dB at 1kHz ● 6 metre cable, battery and mic holder supplied.

**ONLY
\$69⁵⁰**

Cat C-1055

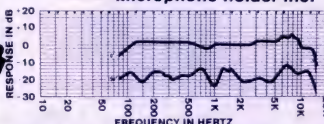
**Budget
Cardioids for
Recording or
Stage**

Uni Directional Dynamic

Cat C-1030

A dynamic cardioid microphone ruggedly constructed so it is ideal for bands and PA work. Because of its cardioid polar pattern it is less sensitive to rear noises. Its dual impedance increases its range of uses. Great for the hi-fi buff, audio freak and because of its low price it would also be ideal for schools, colleges etc.

Specifications: ● Impedance 600 ohms & 50 kohm ● Freq. response 60—15kHz ● Sensitivity—73dB (600 ohm) &—54dB (50kohm) ● 6 metres of cable with plug fitted ● Microphone holder inc.



**VALUE
ONLY \$39⁹⁵**

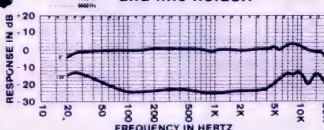
Uni- Directional Electret

**ONLY
\$39⁹⁵**

Cat C-1035

Similar to the model (Cat C-1030) above, this microphone is also suited to semi-professional and home recording systems. Uses an electret insert for an extended low range, just the thing for musical instrument use. Also has dual impedance.

Specifications: ● Impedance 600 ohm & 50 kohm ● Freq. response 20-18kHz ● Sensitivity—68dB at 1kHz (600ohm),—52dB at 1kHz (50kohm) ● 6 metre cable, battery and mic holder.

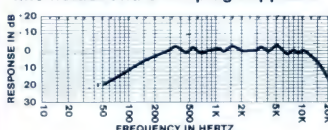


Omni Directional Dynamic



This budget priced general purpose dynamic microphone is ideal for recording purposes. It is high impedance to suit most tape recorders.

Specifications: ● 50kohm impedance ● Freq. response 80-13kHz ● Sensitivity—54dB at 1kHz ● 6 metre cable, mic holder and 6mm plug supplied.



**VALUE
AT \$22⁵⁰**

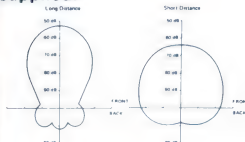
Cat C-1025

**high quality recording
on movie & video cameras**

Uni-directional electret condenser

A compact uni-directional/super cardioid microphone which is exceptional for video and movie use. It switches easily from super cardioid to standard uni-directional. The super directional response pattern enables individual sound sources to be easily isolated from extraneous background sounds. Also ideal for naturalists, surveillance work, stage plays, etc.

Specifications: ● 2.3kohm impedance (super-cardioid), 520 ohm impedance (uni-directional) ● Freq. response 80-12kHz ● Sensitivity—56dB at 1kHz (super-cardioid),—66dB at 1kHz (uni-directional) ● Coiled cable, battery, windscreen and mic holder supplied.



**AMAZING
VALUE
\$84⁵⁰**

with 3.5mm plug

Cat C-1069

FM Wireless Microphones

These two superb omni-directional electret FM wireless microphones both put out an FM signal that can be picked up by any Hi-Fi system FM tuner or ordinary radio. The mind boggles with the possible uses!



Tie Clasp

Small enough to completely conceal, this model comes complete with a clip, battery and a wire antenna.

Cat C-1073

\$34⁵⁰

Handheld

Elegant styling and powerful performance make this mic excellent value. Telescopic antenna supplied.

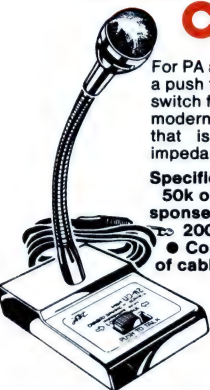
Cat C-1070

**VALUE
\$29⁵⁰**

Includes batteries

O/MICROPHONES

Desk Top Cardioid



For PA and amateur use. It has a push to talk and slide to lock switch for ease of use. A smart modern looking microphone that is ideal for any high impedance input. Cat C-1075

Specifications: ● Impedance 50k ohms ● Frequency response 60 - 15000Hz ● Size 200(h)x75(w)x110(d)mm ● Complete with 3 metres of cable with 6.5mm phone plug fitted.

\$43⁹⁵

Tie clasp Electret



Cat. C-1060

Just like the microphones used by interviewers when they want the mic to be inconspicuous, but with this one you also get fantastic pick-up and perfect clarity. The microphone comes complete with tie-clasp and 2 metres cord, terminated with a 3.5mm phone plug. Being a low impedance device it is also ideal for use with your cassette recorder for recording the family or lecture notes, etc.

\$17⁹⁵

Dynamic Cassette Mic



Cat C-1015

\$5⁹⁵

The perfect replacement for your cassette recorder. Can also be used with cassette recorders having a separate microphone as well as a built-in microphone. The cassette must have a low impedance input (99% of those on the market) and the unit comes complete with main 3.5mm signal plug and 2.5mm remote switching plug. This unit will save your cassette recorder from becoming obsolete.



Lapel Microphone

CRYSTAL INSERT

Save a bundle with the very popular high impedance microphone which has a crystal insert. It is ideal for use with valve amplifiers. Chrome finish, looks smart and the price is so low! Experimenters can use this microphone as it is very rugged.

Cat C-1010

BARGAIN AT

\$2⁹⁵



**Pro
quality-
amateur
price**

**Famous
Brand**

Audio Technica

Scoop purchase of famous Audio Technica microphones! Top quality superb sound from these moving coil dynamics. Features frequency response of 70-15000Hz, sensitivity: -78dB with an output impedance of 250 ohm. At only 270g it won't weigh you down. Ideal for stage, screen and band work. Fantastic price for a top quality unit!

Cat C-1026

ONLY \$42⁵⁰

Buy a pair for stereo and save!
ONLY \$39.95 ea!



At last! A true Stereo Microphone! Stereo Electret

Outstanding value stereo microphone! Ideal for those who want quality but don't wish to pay a fortune for it. This is a unidirectional mic with built in windscreen to protect against noise if used outside. Floating construction helps eliminate vibrations and touch noise. Features include; built-in on/off switch, frequency response 50-20000Hz, Sensitivity 64dB, S/N ratio 40dB, output impedance 1K ohm max. At only 160g it's easy to handle! Comes complete with stand, 3 metre cord & plugs!

\$27⁹⁵

Cat. C-1028

Quality Microphone Accessories

Mic Line Transformer



Just plug-in! Input impedance is high, 50k ohms and the output is low, 100-250 ohms. Fully shielded metal construction, fitted with 6.5mm phone jack socket.

Cat M-0701

\$9⁹⁵

Stand and Boom Clip

Powerful springs enable this clip to hold virtually any sized microphone securely and yet releasing is a simple two finger operation. Has standard microphone and boom fitting threads.

Cat C-1270



\$5⁵⁰

Gooseneck

Allows the microphone to be 'bent' into its required operating position. Can be used with floor stand and boom.

Cat C-1226

\$12⁹⁵

Line Speaker Transformer

Ideal for PA applications. Multitapped for use with 100V or 70V lines.

Cat M-1100

\$4⁹⁵

Mobile Mic Mounting Clips

Attaches to any ferrous surface.

Cat C-1260

\$1⁵⁰

Screw-in-Type

For plastic, wood surface, etc.

Cat C-1262

95¢

Electret Insert

Making or repairing a microphone? This unit will fit most makes and has a high sensitivity with omnidirectional characteristics. Connection data supplied. Weighs only 1.5 grams!



\$2⁹⁵



Floor Stand and Boom

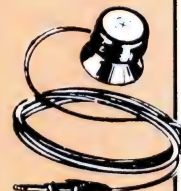
This professional floor stand and boom is a very advanced design. It converts easily from a regular mic stand to a boom stand. This unit is lightweight, portable, collapsible and stable. Comes complete with universal mic. holder which adapts to virtually any sized mic.

Cat C-1200

VALUE AT

\$54⁵⁰

Inductive Pick-up



Complete with lead and plug

A great accessory which can be fitted to your intercom or any piece of equipment that has low output sound levels. Fitting is achieved via a suction pad. Record directly onto tape or feed into a more powerful amplifier. Comes complete with a 3.5mm plug and 1 metre of lead. Just attach and you are ready to record! Note: Current Telecom regulations do not permit this unit to be attached to a telephone.

Cat C-7300

BARGAIN AT \$2²⁵

The Fun Bug

AMAZING VALUE

Like to be the super spy? It's easy with this FM wireless microphone. Tune it into your FM radio and it will transmit to around 30 metres. Great fun! Listen in to all those things you're not supposed to hear. But then you weren't supposed to hear that. Small & lightweight with pocket clip.

Cat C-1071

AMAZING VALUE

\$9⁹⁵



AUDIO/PUBLIC ADDRESS AUDIO

50W (Pk) PA AMP with inbuilt cassette

Now for all the power and control you'll need! Ideal for announcing, paging and background music! This robust PA gives you all the versatility you're likely to want. Logically arranged controls allow complete ease of operation. With a built-in auto-stop cassette deck and a huge 25 Watts you can get your message across clearly and crisply. The 8 element LED output indicator let's you know at a glance just what's going on. Includes separate tape and tone control as well as input volume controls. Fantastic sound quality!



SPECIFICATIONS:

Power Source: 240V

Output: 25W RMS, 50W Peak

Tape player: Auto-stop cassette type

Freq. Resp.: 50 - 25000Hz

Output Imped: 4, 8, & 16 ohm also 25, 70, & 100 Volt

Indicator: 8 element LED output indicator

Dimensions: 260w x 80H x 230d mm

ONLY
Amazing Versatility! **\$299**

Cat F-2040



20W (Pk) PA AMP

This AC/DC public address system is ideal for most fixed amp situations (such as church hall or civic centre) as well as portable use (political rallies and fetes etc.). Features built in siren and fog horn (fantastic for boats!), 5 input jacks and automatically adjusting output impedance - any speaker from 4-16 ohms can be connected.

(Our C-2705 or C-2718 is ideal.)

Comes complete with mounting bracket hardware and power cable.

Output power 12W RMS, 24W Peak
Input & Sensitivity Mic 3mV/200 - 50 ohms.
Tape/Tuner 50mV/10K ohms. Phono 1V/100K ohms. aux 50mV/10K ohms.
8 ohm boost 100mW/8 ohms.

Operating voltage 240V AC or 12V DC.
Dimensions 165(w) x 65(h) x 150(d)mm.
Weight 1.5kg.

Cat F-2035

\$139

40W (Pk) PA AMP with AC/DC supply

For the really big jobs! This top quality, powerful 45W, AC/DC amplifier is ideal for halls, scout groups, fetes, schools or just about anywhere you need to make yourself heard. With all the features you'll ever need in a PA it features 2 mic jacks with separate volume controls. Aux volume control, master volume control, common rail-driving system (70V & 100V) as well as 4, 8, & 16 ohm outputs. Plus - 2 bridged auxiliary input sockets. All this housed in a heavy duty metal case complete with 240V power cord.

Output power 20W RMS, 40W Peak
Input & sensitivity Mic 1-2:2mV/12K ohms. Aux. 100mV/33K ohms.
Operating voltage 240V AC or 12V DC
Dimensions 253(w) x 68(h) x 156(d)mm.
Weight 3.1kg.



\$199

Cat F-2036

Buy now, pay later . . .

Any of our stores will be glad to discuss easy term payments (to finance company approved applicants). Just ask!

We accept Bankcard, Visacard, Mastercard . . . and cash!

ELECTRONIC REVERB

Now... owww... oww... ow! You can create that echo, reverb and 'space' sound of your very own. Ideal for the unsung muso, amateur theatre group or for the sound effects on the slide show you've been preparing. Features in/out jacks for microphone or guitar. High level line. Adjustable delay time - 5ms to 95ms. Depth and repeat controls.



Cat F-3000

\$54⁵⁰

MIC MIXER & PRE-AMP

What a performer! And so will you be when you add this to your system. Solid state mixer enables microphones, tuners, turntables, recorders, etc to be blended together to give one high impedance output. Suitable for most amplifier inputs. Fantastic for buskers, musos, etc: or even your slide show. Cat F-2272



\$22⁵⁰

Rectangular Reflex Horn



This is a superior quality horn speaker that incorporates rubber edge clamping to eliminate resonances. Rated at 15 watts, 8 ohms impedance and a frequency response of 300-5kHz. The dimensions of the horn opening are 127 x 200mm. Cat C-2718

ONLY

\$29⁹⁵

Waterproof 5 inch Horn



Excellent versatile speaker which is perfect for use on boats, alarm systems, P.A.'s and anywhere there may be moisture. Sturdy plastic eliminates rust worries. Rated at 10W, 8 ohms impedance. Complete with 3.5mm plug, lead wire and metal bracket. Dimensions: 130mm diameter. Cat C-2705

\$11⁹⁵

SAVE TIME & MONEY
PRE-BUILT: Just connect them up and away you go — ideal for building into other projects.

DSE Pre-built Audio Modules

Microphone Preamp

Low impedance mic preamp suitable for most general purpose mics in the 250 ohms to 10k ohms range. Comes complete with a volume control pot and knob, just wire in as required. Instruction sheet included.

SPECIFICATIONS:

Input Sensitivity: 0.25mV. Input impedance: 10k ohms. Gain: 55db. Output level: 150mV. Freq response: 20Hz to 20kHz. S/N Ratio: 55dB. Distortion: 0.2%. Supply: 20-24V DC. Size: 89 x 15 x 35mm. Cat F-4154

\$14⁵⁰



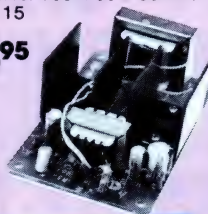
15W Audio Amplifier

Fantastic for PA, modulators, intercoms, etc etc. Multi-tapped output tranny suits 4-16 ohm speakers, huge 15W peak output (10W continuous) from a 12V supply. Ideal for car use, too.

SPECIFICATIONS:

Power output: 15W max. Supply: 12-15V DC, 1.8A at maximum output. Input: 10mV for rated output (also has high level input). Input impedance: Approx 15k ohms. Output impedance: 4-16 ohms. Freq response: 300Hz-10kHz. Size: 100 x 60 x 35mm. Cat F-4115

\$34⁹⁵



Stereo Pre-amplifier

Complete, ready-to-connect RIAA phono preamp, ideal for use with amp modules or your own stereo amplifier. Takes supply direct from most amplifiers - 28 to 32 volts. Ideal for converting an old ceramic or crystal turntable to magnetic operation.

SPECIFICATIONS:

Freq response: 20Hz-20kHz ±1dB RIAA. Voltage gain: 35dB. Input sensitivity: 2.8mV. Input impedance: 200k ohms. Output level: 150mV into 50k load. Distortion: 0.2%. Size: 90 x 50 x 22mm. Cat F-4152

\$14⁵⁰



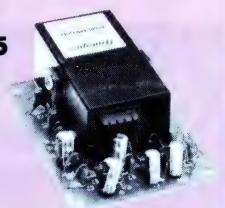
5W Audio Amplifier

Don't need all that power? Smaller module has 5W peak rating (3W cont) with extended frequency response and lower supply rail. Think of the uses: Intercoms, megaphones, modulators, radio amplifiers, etc etc.

SPECIFICATIONS:

Power output: 5W max, 3W cont. Supply 9V DC, 0.9A maximum. Input: 10mV for rated output. Input Impedance: Approx 30k ohms. Output Impedance: 4-16 ohms. Freq response: 70Hz-20kHz. Size: 75 x 55 x 30mm. Cat F-4105

\$24⁹⁵



A TYPICAL PA SYSTEM



MICROPHONE
Uni-Directional Cardioid
Mics are preferred such as Cat C-1050.



AMPLIFIER
Use a solid state AC/DC Amp such as Cat F-2035

OPTIONAL MIC MIXER & PRE-AMP
Use to attach additional Mics, tape recorder, tuner, etc. Cat F-2272



SPEAKER
Attach one or more horn speakers, such as Cat C-2718



CAR HI-FI CAR HI-FI CAR HI-FI

ASPEC®

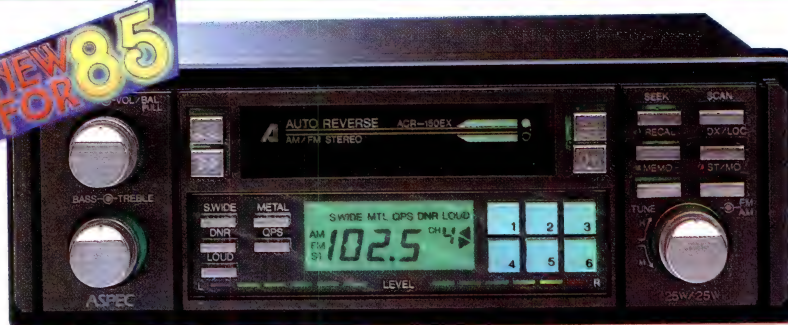
A new name in performance car sound: but one of the biggest names overseas.

It's a name you'll hear much, much more of in the future — because it represents outstanding value for money!

Check out the specifications of ASPEC and compare them to any other brand: you'll find that ASPEC outperforms any others in their price range!

ASPEC car hi fi: exclusively imported and distributed by Dick Smith Electronics.

NEW FOR 85



ACR-150EX COMPUTERISED TUNING/AUTO REVERSE AM/FM RADIO CASSETTE

Push button luxury! This unit is packed with features to leave you free to do the driving while enjoying true HIFI quality sound. The only thing it doesn't do is take the cassette out of the glove box for you. Features computerised station memory 6AM/6FM. Auto seek & scan tuning. Auto reverse. QPS. DNR. Metal tape select. PLL freq. synthesizer tuning. DX/Local select. Full illumination. 3 colour display of output. The LCD digital display lets you know the station and mode at a glance. With separate loudness, bass and treble controls gives you complete control over the massive 25W/channel. Like having a butler in the car with you! Cat A-6000

Dimensions 178(W) x 50(H) x 140(D)mm

\$399

NEW FOR 85



ACR-80EX AUTO TUNE AM/FM RADIO STEREO CASSETTE

Fantastic value! Bring live music into your car without the crowds. This high power auto stop cassette radio has 12 station memory (6AM/6FM) so there's no need to fiddle with knobs while you're driving. With bass/treble, stereo wide and loudness controls you have complete command over your favourite tune. Features seek and scan auto-tune, huge 25W/channel, DNR, DX/local, Full illumination and three colour level display. The FJ'll wonder what happened.

Cat A-6005

Dimensions 178(W) x 50(H) x 140(D)mm

\$299

NEW FOR 85



ACR-60 STATION FINDING AM/FM RADIO STEREO CASSETTE

Forever leaving the tape running? This auto-stop cassette/stereo radio is just the thing! Computerised station memory (6AM/6FM) and auto seek and scan makes station choice easy. Features Metal tape select, DNR, PLL frequency synthesizer, IAC, soft muting, full illumination, loudness control, balance control, line out. And much, much more! Your friends will be envious and they won't believe the price!

Cat A-6010

Dimensions 178(W) x 44(H) x 140(D)mm

\$199

SPEAKERS SPEAKERS SPEAKERS



608 ET 3-WAY SURFACE/FLUSH MOUNT SPEAKER SYSTEM

Exceptional HIFI quality from these beautifully designed and constructed 3-way speakers. If you get them in your car you'll never want to get out. With a huge 40W max power capacity they'll bring realism into your music. Featuring a frequency response; 80-22000Hz. 136mm woofer, 66mm midrange & 57 tweeter. All adding up to unbelievable value in a car speaker system.

Cat A-6976

\$89

NEW FOR 85



RDM 670 3-WAY 4-SPEAKER OMNI REAR MOUNT SPEAKERS

Living room sound from the back seat! This 3-way 4-speaker system offers the ultimate in car hifi sound reproduction. Easily mounted and only 68mm deep so they can be placed almost anywhere in your car! An enormous 60W max power capacity and a frequency response of 70-20000Hz gives a full crisp sound. All this and incredible value too!

Cat A-6970

\$129

NEW FOR 85

FI CAR HI-FI CAR HI-FI CAR HI



AR2000 AUTO STOP CASSETTE/AM-FM STEREO RADIO

Fantastic sound quality, reliability and looks, all rolled into one! You can stop looking in the mirror! This auto stop cassette radio is all you need in a car sound system. Features like; locking fast forward and rewind, loudness control, Stereo/mono/metal tape select, tone and balance control and LED indicators all go to make this one of the best value for money units around. Cat A-6015

Dimensions 178(W) x 42(H) x 120(D)mm

\$99

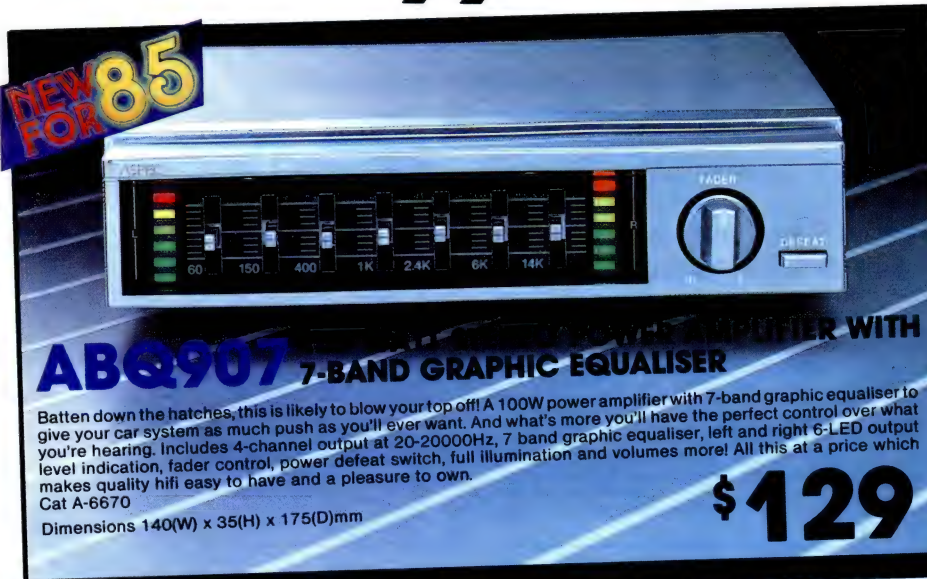


AP850 AUTO REVERSE CASSETTE PLAYER

Already have a good radio but would like a a cassette as well? Here's the answer! A superb auto reverse that lets you consider the road while it handles the tapes. All the things the big ones have; metal tape select, locking fast forward & reverse, loudness, tone and balance controls, tape direction and loudness/metal indicators and heaps more! Can be mounted in or under dash. Economy plus! Cat A-6487

Dimensions 140(W) x 42(H) x 176(D)mm

\$99



ABQ907 7-BAND GRAPHIC EQUALISER

Batten down the hatches, this is likely to blow your top off! A 100W power amplifier with 7-band graphic equaliser to give your car system as much push as you'll ever want. And what's more you'll have the perfect control over what you're hearing. Includes 4-channel output at 20-20000Hz, 7 band graphic equaliser, left and right 6-LED output level indication, fader control, power defeat switch, full illumination and volumes more! All this at a price which makes quality hifi easy to have and a pleasure to own. Cat A-6670

Dimensions 140(W) x 35(H) x 175(D)mm

\$129

ASPEC
Audio components that
make your car more
exciting to drive.



SPEAKERS SPEAKERS SPEAKERS



\$69

DM543 3-WAY SUPER SLIM DOOR MOUNT SPEAKER SYSTEM

Beautifully crafted, ultra thin door mounted speakers giving true hifi image. With 30W max power and frequency response 90-18000Hz these give quality sound reproduction without the usual hefty price tag. Easy to mount and only 30mm in depth so you can fit them almost anywhere. Cat A-6972



\$49

DS401 DIN TYPE DOOR MOUNT SPEAKERS

For replacement or your new cassette these speakers offer excellent value! Door mounting type with a power capacity of 30W max and a mounting depth of only 32mm. Functional design makes installation a breeze. While the sturdy construction means a trouble free life. And bargain priced as well! Cat A-6974

FI CAR HI-FI CAR HI-FI CAR HI-



Digital Readout Car Stereo Sound System with Graphic Equaliser!

Unbelievable value! This amazing machine has a stereo tuner, tape player, graphic equaliser, clock and a massive 25 watts per channel power to blast you through the roof! You have to hear it to believe it! AM/FM stereo has digital frequency read-out and cassette player is auto reverse for convenience. Then top it off with a 5 band deluxe graphic equaliser (to 'contour' the sound to the interior of your vehicle), front/rear speaker selection, fader control and LED digital clock! All this is contained in one magnificent 'in-dash' unit which looks like you spent a fortune! What more could you possibly want?

- AM/FM Stereo Radio & Auto Reverse Tape Cassette.
- Powerful 25 watts per channel.
- Fits standard dashboard cut-out. Cat A-6488

ONLY
\$225⁰⁰



Two In One! FM/AM Radio/Cassette

Fantastic sound and looks, along with proven reliability... what more could you ask for in an auto reversing car cassette stereo and AM/FM radio combination? Features include: Full auto Reverse Mechanism, Fast Forward and Rewind Lock, Tape/Stereo Running indicators, Stereo/Mono Switch, Mute Switch, Tone/Balance Control Switch and Universal Adjustable Shafts (will enable this one to fit the mini AND the Rolls!).

Specifications: Output power... 7W max. per channel. Speaker Impedance... 4 or 8 ohms. Dimensions... 44(h) x 160(w) x 125(d)mm. Weight... 1.4 Kg. Cat. A-6482

\$125



Gutter Grip Antenna \$125⁰⁰

Twin telescopic rods of about 950mm each pull in those weak signals. Attaches to the gutter of your car very easily. Comes with about 1.9 metres of lead and plug. Very popular antenna in Europe. Cat. A-7320

AM/FM Mini Rubber

This is a very flexible rubber antenna that is ideal for both AM and FM. It is only 390mm high. This antenna will not rust or break.

Mount on the cowl. Cat. A-7345

Lock Down Antenna

The ever popular lock down, 5 section telescopic antenna. Comes with key. Underhang is 330mm. Cat. A-7300

Electric Antenna

A dash mounted switch enables you to raise or lower this antenna from inside the car. Works on both 12V DC negative or positive earth. Requires 320mm clearance below cowl. Slipping clutch ensures no burn outs. Cat. A-7360

More Antennas

Universal Top Cowl

Can be mounted virtually anywhere - requires 25.4mm mounting hole. Three section telescopic with lead and plug. Cat. A-7340

Deluxe Roof Antenna

Just like those sporty Italian cars - you too can have a roof mounted antenna. Has spring loaded base and adjustable length plus you can angle the antenna to suit your requirements. Great for FM. Cat. A-7306

To suit specific models:

Mazda pillar	Cat. A-7325	\$9.50
Top Cowl	Cat. A-7335	\$9.95
323/Laser	Cat. A-7330	\$9.95

4 metre Car Antenna Extension Lead
Fully compensated (low signal loss) 4 metre lead. Complete with plug on one end and socket on the other. Ideal for when your new antenna has a lead that is too short! For rear mounted antennas. Cat. A-7452

1 metre Car Antenna Extension Lead
Exactly the same as the above lead only this one is 1 metre in length. Ideal for short runs. Cat. A-7450

Standard Speaker Grille

130mm diameter to suit most round speakers. Ideal for boat /van speaker fitting to walls. With metal rim for ease of fitting. Cat. A-7818

\$4⁰⁰

Budget Stereo Speakers Rear shelf mount

Mount them anywhere... on the rear parcel shelf, from the roof - you name it! Now a brand new model with even better performance: huge 15W maximum power rating; with deluxe ceramic 84g magnets for great sound, 4 ohms impedance, suits almost all car hi fi systems. Cat. A-6980

\$1295^{PAIR}

Flush Mount

Standard 130mm diameter speakers with soft padded grilles, as used in most car stereo systems. Suit standard large cut-out (eg. below rear parcel shelf) - 10 watts maximum, 5 watts nominal, 4 ohms. Extra large 140 gram magnet. Cat. A-6985

\$1995^{PAIR}

Super thin flush mount Car Door Speakers

Super thin type for mounting in door or kick panels, etc. Heavy wire mesh for maximum protection. 4 ohms impedance, 100mm size suits standard cut-out found in many Japanese cars. Handles up to 15 watts. Complete with mounting hardware. Cat. A-7050

\$2495^{PAIR}

Mini Brutes!

Wow! What a performance from speakers so small! They'll handle an amazing 30 watts yet measure just 100mm square! Absolutely superb in vans, 4WD's, caravans etc. very elegant appearance with their protective metal 'grille' (saves a damaged speaker!). Supplied with 3 metres of connecting cord at no extra charge. Brackets included. Cat. A-2380

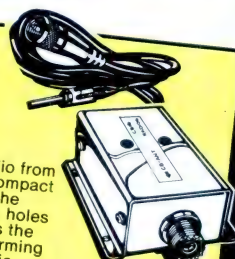
\$49⁰⁰
PAIR

CB/RADIO Antenna Splitter

Run both your CB & Radio from your CB antenna! This compact device fits neatly under the dash. Saves drilling extra holes in the body - and lessens the risk of some moron performing sculpture on your car radio antenna. And it's cheaper than a new antenna too!

Cat. A-7455

ONLY **\$995**



We bulk buy... and you save \$\$\$!

FI CAR HI-FI CAR HI-FI



Auto Reverse Stereo Cassette.

What power! What performance! What convenience! That's our incredibly popular auto reverse stereo cassette... thousands of happy owners can't be wrong! Just the thing when you already have a car radio - and this beauty means you can be rewinding tapes without having your radio turned off. Try doing that with a combination cassette/radio!

It really packs a wallop: 20 watts per channel of pure sound muscle, with one of the most reliable cassette mechanisms you'll find anywhere, with its simplified no-belt mechanism.

And it's designed with safety in mind too: not just auto reverse - it has locking fast forward and rewind so you don't have to hold a button down.

• Suits 4 and 8 ohm speakers. • Size 120 x 48 x 166mm.
Cat A-6486

\$99



Mini Car Cassette

If space is a problem, the DSE Mini Cassette Car Stereo Player won't be! Suits under dash or on transmission hump mounting (supplied with mounting bracket), plus mounting and wiring instructions to make the job simple - even if you have two left thumbs!

Tiny size (just 110 x 160 x 46mm) means it will fit in just about any space - and it pushes a very respectable 8 watts max per channel!

Slider controls and auto stop mechanism makes it perfect for the car: much safer than other controls!

- 16Watts maximum
- Auto stop mechanism
- IC circuitry for reliability

Cat A-6485

\$39⁹⁵

Quality sound from these Co-axial speakers

Co-axial speakers have the excellent bass response of dual cone types PLUS a fantastic top end range achieved through a tweeter that is suspended across the main cone. They have a large 280 gram magnet and are rated at 4 ohms. They will suit most in-car systems. Hardware, mounting template and deluxe grille are included in the price. Cat A-7000

\$44⁹⁵

4WD Van/Truck Speakers

For those with just a little more space (not much more!) try these superb two-way 8 ohm enclosures. Extremely robust construction (made from aluminium), measure 120 x 120 x 190mm, and handle up to 35 watts. Freq. response 35-20,000Hz. Cat A-2375

\$115

Quality speaker replacements

Ideal for service centres, radio installers - even the handyman. As found in most major brands - pick the type you require.

All have dual impedance - 4 and 8 ohms - suits any system. 130mm round (The most popular of all)

Cat A-7145 \$7.50 Each

150 x 100mm oval (With Ferrite magnet)

Cat A-7130 \$5.95 Each

180x 130mm oval (popular oval type)

Cat A-7135 \$8.50 Each

Stylish Slimline 60W Stereo Booster with Graphic Equaliser!

Your car is about the worst listening room imaginable. No wonder so many car stereos sound awful! Now! you can 'contour' the sound to make up for your vehicle's interior and boost its power up to a huge 30 watts per channel with this attractive Graphic Equaliser/Stereo Amplifier. Now you're talking! Has 7 individually adjustable frequency bands - up to 12 dB cut or boost in any band. LED level meters for each channel show power output and 4 speaker front/rear fader control for 'all around' sound. You won't believe the difference this equaliser can make! Specifications: Frequency response... 35-25,000 Hz. Crosstalk... 45dB. Power Source Voltage... 11-16VDC (neg. earth). Dimensions... 155(w) x 22(h) x 140(d)mm. Weight... 950g. Cat. A-6666

Suits 4 & 8 ohm System...
Just connect into your speaker wiring!

\$85

50 watt 3 way Speaker System

Stereo sound in your car is unbeatable and these car stereo speakers not only sound great but look great. The Dick Smith FX-16 is a 3-way, 3 speaker system and is capable of handling up to 50W for those high powered systems. They are incredibly easy to install - with the quick connect wires, no soldering or tools are required. They also come with detachable brackets so they can be mounted horizontally or vertically.

- Blends in with any decor
- Suit most in-car systems
- Top quality sound
- Latest attractive gun-metal finish

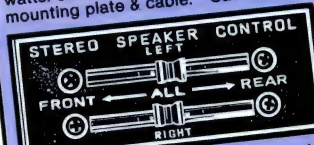
SPECIFICATIONS: Speaker units - 4 inch high compliance woofer, 2½ inch cone squawker, 2 inch twin mini dome tweeter. Cabinet - sealed enclosure, impedance 4 ohms, nominal power 20 watts each, maximum power 50 watts each.

Cat A-7082

ONLY \$89⁵⁰

High Powered Speaker Fader

We don't have to tell about the magic of 4 speakers surrounding you in your car! But you need this fader control to adjust the front and rear volume separately for maximum comfort and sound quality. This amazing stereo fader controls two pairs of speakers up to 25 watts. Complete with fascia mounting plate & cable. Cat. A-7834



• Capacity - 10 watt maximum. Control your sound so that it comes from either the front pair or the rear pair of speakers or both at once. Easy to install. Cat. A-7832

Stereo Fader Control

ONLY \$7⁹⁵

CAR ALARMS/BITS & PIECES

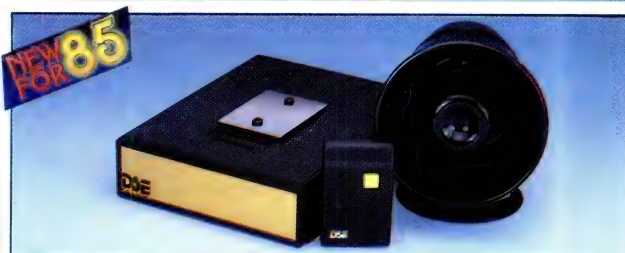
Car Commander- Tells you what's happening under the bonnet!

\$84⁹⁵



Cat. Y-3011

Now! Sophisticated control and monitoring of your cars functioning is here! The Car Commander tells you what's happening under the bonnet. Quickly and Accurately! Scanning and reporting via the LCD you have instant visual reference for all those important functions. Oil pressure, voltage, RPM, temperature (both inside and outside), water temperature. Also has an inbuilt stop-watch. Both RPM and water temp are programmable so that the Commander will tell you when something's going wrong.



Remote Switched Car Alarm

\$159

Cat. L-5096

TOP CAT in the alarm stakes! This new remote switched alarm gives you a current sensing alarm with encodable transmitter key so you know nobody but you can switch it off. Features include; Instant boot & bonnet trigger. Remote switching with TWO transmitter keys. Ignition cut-out. Battery back up capability (in case they cut the power). 110 dB siren. Manual override. And it gives three beeps when you turn it off so you can find your car in that crowded car park. Features like this would normally cost three times as much!



CURRENT SENSING CAR ALARM

Alarm sounds when anything electrical in the car is used (interior light, brakelights, ignition etc.) One of our most popular models. Features built-in exit and entry delays and comes with complete instructions and wiring. Installed in less than an hour this is secure protection for one of your most valuable possessions. Cat. L-5090

\$59⁵⁰



ULTRASONIC CAR ALARM

Protect both your vehicle and its contents with this latest alarm from Philips. Using the Doppler principle detects any movement in the car and sounds the alarm. Very reliable! Features adjustable entry delay and sensitivity control; boot and bonnet switches also included. It's easy to fit as well! Cat. L-5082

\$129



BIKE ALARM

MOTORCYCLE
INTERCOM

Proud of your bike? Don't lose it to a stranger! With this compact alarm your bike is safe anywhere. Fits easily to any bike and gives a LOUD alarm if the bike is disturbed. Send them running and save your wheels. Cat. L-5088

\$54⁹⁵

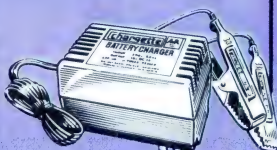
MOTORCYCLE INTERCOM

At last! Talk with your pillion passenger while the bike is in motion. No more sign language. Fits neatly under your helmet. Cat. F-1000

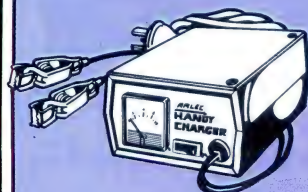
\$59⁵⁰

Battery Chargers Charge

For maximum battery life, the experts say to charge your battery a little, but regularly. Charge it does just that with a 1A trickle charge that will keep your car battery always ready. Plugs directly into power point. Complete with leads and clips.



\$26⁰⁰
Cat. M-9802



**High
Power
Charger
\$34⁰⁰**
Cat. M-9800

Now for both 6 & 12V batteries!

Get going fast! Completely charge a dead battery overnight with a high 4A charge. It could get you going in much less time. Complete with charge meter so you won't overcharge the battery. Top value!

Car Voltage Converters



6-12V Cat M-9592
24-12V Cat M-9594
BOTH TYPES

\$39⁹⁵

If you drive an old vee dub, or a truck, you'll know how frustrating it is when your vehicle supply voltage is different from the device's! Here's the solution - two models for both types of problem: a 6 to 12 volt, and a 24 to 12 volt. Output current 2A continuous, 3A peak. Suits car radios, stereos, CB's, scanners, etc.

Hi Power Plug In

6V, 7.5V, & 9V in one!

800mA Max.

Suitable for battery powered equipment that requires more than average current (eg larger cassette & radio units, etc.) Complete with 4 way plug and battery snap connector. 6, 7.5, & 9 V at a massive 800mA! Switchable polarity on output. Cat. M-9584

\$11⁵⁰

Noise Suppressors

Ignition Lead Suppressor

Connect anywhere in the HT to eliminate or reduce ignition noise. Simply cut centre (coil) distributor wire and screw cut ends into suppressor. Cat A-7904

Spark Plug Noise Suppressor

A spark plug cap with inbuilt 50K ohm resistor. Connect between plug lead and plug after cutting old plug cap off. Goes directly on spark plug. Cat A-7908

Capacitor Noise Suppressor

The universal 'cure-all' for auto noise. 0.5uF capacitor, designed to fit directly to either noise source or noisy device - or both. Bypasses AC (noise) to chassis. Use on generators, alternators, coils, switches, water & fuel pumps, etc. Cat A-7902

Alternator Noise Suppressor

A capacitor type suppressor with three leads - one to earth and the other two between your alternator and car cassette, radio or CB. Reduces or eliminates the whine caused by the alternator. Cat A-7924

Coax Alternator Suppressor

Heavy duty 0.5 uF 50 volt coaxial capacitor for extreme cases of alternator whine. Connect in series with the output lead of the alternator and earth the case. Will handle 60 amps. Cat A-7928

AR ALARMS/BITS & PIECES

Breath Tester

Don't take a chance! A low priced battery operated alcohol breath tester can save you a fortune- and your licence. Keep it in the glove box. Accurately calibrated to 0.05%. Simple, quick and convenient to use. Note: NOT a legal check. No liability assumed.

\$79⁹⁵

Cat. Y-4000

ALARM DETERRENT STICKER

Brightly silk-screened inside adhesive sticker for your car, home, etc. Great for warning off intruders: they're more likely to go to easier pickings! They don't know you haven't even got an alarm... or have you?



\$1

Cat. L-5310

Shock - detector switch

About the best form of protection for motor bikes. Also great for 'tamper proofing' other alarms.

Cat. L-5250

at only

\$4²⁵



Vehicle Alarm Switch

N.C. under spring tension, will go open circuit when door is closed. Ideally suited to vehicles whose courtesy lights are not actuated by the doors. Cat. L-5256

at just **\$1⁹⁵**



REMOTE PAGING CAR ALARM



Latest technology

Don't give the thief a break - particularly if he's pinching your car! This fantastic alarm actually pages you and tells you someone is trying to take your car - up to several hundred metres away! And it will also warn if hit in an accident. Easy to install! Low price includes both alarm & pocket beeper.

Cat. L-5095



DOC Approval No. 214063

Wow! Module and Beeper at only **\$115**

Barrel Key Switch

For car or home alarms needing external switching. Two keys supplied with each switch.



\$7²⁵

Cat. L-5290

Digital Tacho Car Clock

Suitable for 4, 6 & 8 cylinder cars. Digital display relays information quickly and accurately. The day/night display automatically dims in low light: a great aid to safety. Universal bracket supplied for fast, easy installation. Tacho range: 100-6900 rpm (4 & 6 cyl) 100-3450 rpm (8 cyl)

\$29⁹⁵

Cat. Y-3012



Save a fortune on tune ups!



\$34⁵⁰

Cat. A-8514

Engine Analyser

Why pay others to do the simple jobs you can do yourself!

- Lo Volts
- Hi Volts
- Points
- Lo Tach
- Hi Tach
- Dwell

That's most of the electrical testing needed to keep your car in top condition. Fits the palm of your hand, has multi-coloured scale for easy reading. Complete with heavy duty leads and clips and can be used on most 4, 6, and 8 cylinder cars. Pays for itself in just one tune up!

THE LATEST ELECTRONIC GADGETS FOR YOUR CAR

FLASHING ALARM LIGHT

Just like those the alarm people install. Flashes to tell the thief your alarm's switched on. Even if you haven't got one. Comes with two alarm warning stickers. Cat. L-5097

\$15⁹⁵



FLUID LEVEL MONITOR

Protect your car's heating system. Comes with sensor unit for overflow tank from the radiator or the washer reservoir. You know when it's low: before damage! Cat. A-8534

\$11⁹⁵



ALARM BARREL SWITCH

With two keys for external control of car or home alarms. One hole mounting makes installation easy. Cat. L-5295

\$8⁵⁰



BATTERY MONITOR

Keep check of your battery. Coloured LEDS indicate rate of charge or discharge. Buzzer sounds if battery runs low. Mounts neatly on dash. Cat. A-8536

\$14⁵⁰



AMBER WARNING LIGHT

Revolving emergency signal light for car, truck or marine use. Magnetic base for easy fixing to any metal surface. 3.6 metre coil cord & cigarette lighter plug. Cat. A-8510

\$22⁵⁰



HEADLIGHT REMINDER

Easy to install it reminds you when you've left the headlights on. No more flat batteries and push starts. Cat. A-8509

\$11⁹⁵



REAR WINDOW BRAKE LIGHTS

Safety first! Increases visibility by placing lights at eye level. Added warning to drivers behind. Easy to install with complete kit and instructions. Cat. A-8525

\$17⁵⁰



INTERIOR LIGHT DELAY

Delays interior light shut off when car door closes. Provides time to find keys and seatbelts. Turns off automatically. Easy to install on any 6-12-24 volt system. Cat. A-8532

\$8⁹⁵



FLASHING DASHING WARNING LIGHT

Easily installed in the dash, this one makes them think you've got a car alarm. The flashing red light will send them on to try the next one. 12V. Cat. L-5093

\$19⁹⁵



\$34⁵⁰

Cat. A-8504

Timing Light

With this timing light you can actually cut down on fuel and maintenance costs. Brilliant XENON flash makes the old neon type look like a blown light globe! You need a timing light to tune your car properly, so why not do-it-yourself with the 'professional' XENON timing light. Complete with 3 leads, heavy duty clips and FULL INSTRUCTIONS.

The X.K. Radar Detector



Tiny size - but what a performer!

Traffic fines are costly these days so it pays to keep both "X" and "K" band radar, so it's usable in all areas of Australia with all radartypes currently in use - CW, pulse stationary, moving, and gun type. And with the all new superheterodyne circuit you get extra-long range and very sharp selectivity to minimise false triggering. This superb unit features visual warning plus an audible go - it's as easy as that! Exclusive 3-way mounting-choose dashboard, windshield, or visor-and all hardware is included! ★ Not legal in Tasmania

Cat. A-8502

ONLY

\$225⁰⁰

ULTRASONIC Back-up Sensor

The greatest boon to drivers since life insurance! Honestly parking has never been simpler than with this amazing new device. Beeper sounds when you are getting too close to another vehicle and gets louder the closer you get. Waterproof transducers for all weather use. Easy to install. Even easier to use. Receiver module plugs into cigarette lighter socket. Comes with full instructions. Cat. A-8520



Short on space? Short on cash?
Check out the all-new

K40 Economy AM

Here's top value in CB. The K40 might be tiny in size and even tinier in price, but it's enormous in features:

- Maximum legal power ● All 40 legal channels ● Digital channel readout
- Incredibly simple operation

If you want great value in AM CB, it's hard to beat the K40. And it comes complete with a quality microphone, mounting bracket and full instructions.

Cat D-1443



Small enough for even the smallest car...
we've even seen them on motorbikes!

DOC Approval No. 249A049

ONLY
\$119

MINI POWERHOUSE!

Famous Midland 77-001 40 Channel AM

What a performer! From the world's leading CB manufacturer - Midland - comes this amazingly tiny 40 channel AM CB. It's just 160 deep, 120 wide and 35mm high - yet it packs the full 40 channels in with maximum legal power output! Also features a large green fluoro channel display plus huge signal strength/power meter. Cat D-1445

- Maximum legal power. ● Full 40 legal channels. ● DOC Approval No 249A046



ONLY
\$125

When you want clear, clean communication TIGER UHF CB

For business or pleasure - you can't go past UHF. It hasn't really taken off in Australia (at least not like 27MHz!) so there are plenty of clear channels up there. And UHF CB communication is FM - so it's clearer.

This UHF Tiger CB is made by one of the world's leading manufacturers, is fully approved by the Department of Communications - and features maximum legal power and all 40 UHF channels.



ONLY **\$299**

Doc Approval
No. 250017

Cat. D-1805

DICK SMITH HORNET II 40 Ch.AM/SSB

The latest in 40 channel CB technology! With the massive 12 watts p.e.p. output on SSB, this set meets the high DOC standard RB249A. The quality of the unit is even better than the high standard set by its predecessor, the Hornet 1, our most popular SSB 18 channel CB ever.

Specifications: Frequency Range - 26.965MHz to 27.405MHz Antenna Connector - PL 259 Controls - Channel selector, mode selector AM-USB-LSB, Squelch RF Gain Clarifier, Noise Blanking/ANL switch, PA/CB switch **Illuminations** - LED channel number light LED RX/TX indication **Accessories** - DC power cable with built-in fuse, microphone clip. Cat. D-1710 DOC Approval No 249A006



ONLY **\$279**

Hand Held

Fitted with the bushwalking and 'safety' channel 27.620MHz, this transceiver is light enough to take anywhere - just in case. Great for the rockhopping fisherman too - it won't take up much space in the basket, and could get you out of trouble. While not approved for marine use, in a genuine emergency you're allowed to use any frequency at your disposal - so it's a great idea to keep one of these in the boat.

Cat D-1102

ONLY
\$75

DOC Approval No 242H0108



NO LICENSE REQUIRED Pocket Com II Walkie Talkie

This is THE transceiver for aspiring James Bonds or Dick Tracys in our community Full 2-way transmission and a size that fits secretly into your pocket. A great gift for any child. Also ideal for the more serious user: a mother who wants to know what Johnny is doing in the backyard; for construction workers etc. Buy a few and start a spy ring!

Cat. D-1101

\$11.95

Complies with DOC
Specification RFME001



Keep in touch whatever you're doing! Hands-free 2-Way Radio

Ideal for short range communication when you need both hands free. This superb quality FM two way radio transmits automatically. Perfect for the job site, around the home or at the training match. Lightweight - the one-ear boom mic adjusts to fit any size head. And you can use as many of them as you like!

Cat. D-1150

\$79.95

NO LICENCE REQUIRED



Complies with DOC
Specification RFME006

IO CB RADIO CB RADIO

Car Radio/ CB Antenna Splitter

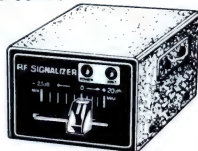
Why put on extra antennas when you don't have to? Use your normal CB antenna for your car radio too: Splitter box allows both to be used simultaneously. You can even transmit on the CB without blasting your car radio's input stage to bits!
Cat A-7455

\$9⁹⁵



RF Signaliser

Inserts in antenna lead to give from -25dB to zero to +20dB gain. The gain lifts signals out of the mud while the cut stops them bending your needle. Switches automatically on transmit. Needs 12vDC 35mA.
Cat D-3828



\$54⁵⁰

Remote Communications Speaker

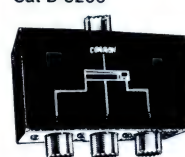
Great for the car, home - in fact anywhere you need an extension speaker for your transceiver or receiver. 8 ohms impedance, supplied with cable and standard 3.5mm audio plug. Because of the larger (10cm) dia. speaker, you'll probably get much clearer sound too.
Cat A-2451



\$13⁹⁵

3-Way Antenna Switch

If you have more than one antenna or use more than one rig then this switch will save you swapping by hand. Handles 150 watts at 30MHz: ideal for base or mobile use.
Cat D-5206



\$12⁵⁰

TVI TROUBLES? TV set HI-PASS Filter

Actually attaches to unit behind affected by CB or amateur radio. Will attenuate frequencies below 50MHz making it ideal for TVFM sets. Simple to connect between TV set or FM tuner antenna terminals.
Cat D-7084.



\$2⁹⁵

Antenna Matcher

Connected in antenna lead, can be adjusted to virtually eliminate all mismatch between antenna and transmitter. Handles 100 watts, 50 ohm impedance, PL-259 connectors.
Cat D-5512



\$19⁵⁰

Antenna Mount Roof Rack

Here is the ideal unit for the person who doesn't want to drill a hole in the vehicle roof and doesn't want the slightly directional effect sometimes obtained from gutter or bumper mounting. This fully plated bar mounts easily on virtually any car roof and will withstand high speeds and rough roads. Mounting plate with 16mm hole takes most available antennas and mounts.
Cat D-4520



\$12⁹⁵

CB Spcres

DC Power Leads:
DC Power lead for Midland transceivers (suitable for a huge range of other transceivers with 3 pin plug).
Cat D-9001



\$3⁴⁰

DC Power lead for Dick Smith transceivers or other transceivers with 2 pin plug.
Cat D-9006



\$3⁴⁰

Antenna Value

1. 1/2 Wave Vertical Base Antenna

Brand new design for 27MHz base stations. Very easy to erect, and very easy to SWR in. Not just for CB - also ideal for surf clubs, boating clubs etc. And easily adapted to 28MHz for amateurs.
Cat D-4427 \$79.00

2. 27MHz Gutter Grip Antenna

Simply clips onto the rain gutter of most vehicles. Features no hole installation and can be installed or removed without tools. Antenna has centre loading coil to increase effective antenna length
Cat D-4411 \$28.50

3. 27MHz Magnet Base Antenna

Centre loaded stainless steel construction with heavy magnetic base & 3.3m coax cable with PL-259 plug.
Cat D-4412 \$28.50

4. 27MHz 1/4 Wave Whips

Your choice of stainless steel or fibreglass. Each is approx. 2.75m long. Ideal for marine or CB. Easy SWR adjustment. Mounts available to suit your requirements. 3/4 24 tpi.
Stainless Steel Cat D-4415 \$22.50
Fibreglass Cat D-4416 \$25.00

5. 'Rubber Duck' Mini Helical

Very Flexible-perfect for handheld sets. Only 300mm long and is attached over the normal telescopic antenna when it is retracted and secured by a thumbscrew. Great replacement
Cat D-4629 \$13.50

6. Helical Whip & Base

Our most popular CB antenna. 1.5m long, complete with co-ax cable and special base
Cat D-4076 \$29.50
Whip only from above system. Cat D-4074 \$19.95

7. Mini Whip

Just 1 metre long - with really great performance. Less wind resistance, less danger of being hit by low flying aircraft.
Cat D-4072 \$17.50

8. Mini Mini Whip

If you thought the above one was small ... just 33cm long! Helically wound, standard base.
Cat D-4635 \$16.95

9. Bush Bandit Adjustable Helical

Another one from Mobile One! Top-loaded helical with fully adjustable top stub. Great for use as a spear, too.
Cat D-4420 \$25.00



Swivel Ball Mount

Heavily chrome plated. Slanted for greater strength. Ideal for boats, vehicles, trucks etc. Cat. D-4502..... \$11.50

Steel Spring

Plated steel spring. Designed to take up to 3 metre whip. Will bend through 90° without breaking. Cat. D-4503..... \$12.50

Lightweight Spring

Designed to suit standard loaded 1/4 wave mobile whips, to give the type of flexibility required in today's low car parks! Cat. D-4500..... \$8.50

Antenna Adaptor

USA 3/8" x 24 tpi male thread to Australian female socket. Used for connecting USA 3/8" x 24 tpi base with Scalar or similar antennas. Cat. D-4505..... \$1.99

Antenna Adaptor

The standard Australian Female thread to 9.5mm x 24 tpi female, used for connecting Scalar or similar base to any of our antenna or accessories with 9.5mm x 24 tpi mounting. Cat. D-4504..... \$2.95

Quick Disconnect

Enables you to move your antenna from its mount with an easy press and twist. Saves your antenna being stolen. Cat. D-4501..... \$11.50

Antenna Layover

Heavy duty unit allows antenna to be left in three separate positions, vertical, horizontal or angled. Positions are easily obtained at the push of a button. Will not layover if hit. Cat. D-4506..... \$13.50

Universal Stud Mount

Accepts 9.5mm x 24 tpi thread and comes with mounting plate and ground lug. Plated steel and nylon insulated bushing. Mount requires 12 mmhole. Cat. D-4510..... \$3.40

Universal Mirror Mount

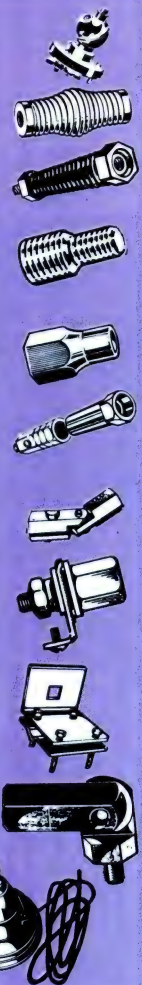
Clamps to your roof rack or mirror as a support for standard antennas. It has a 12mm hole for mounting the stud mount, D-4510, less centre plate. Made of plated steel. Cat. D-4512..... \$7.95

Folding angle adaptor

Why take the antenna of the car every time you go near a car-park? Fold it down - quick and simply! Standard male and female threads. Cat. D-4507..... \$7.95

Magna-base universal mount

A quality magnetic base - ideal for the company car where holes aren't allowed! Complete with 2m co-ax and PL-259 plug. Standard thread suits most antennas. Cat D-4515..... \$32.50



MARINE ELECTRONICS MARI



The DSE VHF Marine

A VHF Marine Transceiver that links you to the normal telephone network while you are at sea! With features you'd pay \$\$\$\$ more for anywhere else. Look at these: All VHF international marine channels fitted. Maximum legal power (25W) with low power 1W - switchable to conserve battery power. Complete with wall mounting brackets, microphone, power cable and full, easy to follow instructions. Fully approved.

- All 55 international VHF marine channels fitted (no expensive crystals to buy!) in the 156 - 163 MHz marine band.
- Fully approved under Department of Communications Specifications RB274B.
- Maximum legal power output (25W) with low power 1W - switchable to conserve battery power if required.
- 'Universal' mounting with front panel reversible to allow for any position.
- Endorsed for OTC's 'Seaphone' service (making telephone calls from your craft).
- Complete with wall mounting brackets, microphone, power cable and full instructions.

Cat D-1401

DOC Approval No. 274B033

\$449



ENDORSED BY OTC SEAPHONE
TO BE LINKED WITH NORMAL
TELEPHONE NETWORK



The top value DSE Hornet II Marine AM/SSB

Amazing value! The Hornet II Marine offers top range, top performance on the 27MHz marine band. SSB (single side band) gives you that extra punch, that extra range when you need it most. And for local work, the Hornet II Marine also has standard AM transmission - so you get the best of both worlds! Covers all legal 27MHz marine channels (plus provision for any future expansion) with no crystals to buy. And it has a very effective noise blanker and automatic noise limiter - so it's great on impulse noise. READY TO USE: JUST ADD THE ANTENNA YOU REQUIRE!

- All 9 channels fitted
- LED frequency readout
- Doubles as PA amp with optional horn speaker
- DOC Approval No. 244010

Cat D-1716

\$299



Super Economy AM Marine

Yes! This is the super economy model, ideal for the smaller boat. If you stay close to shore, this deluxe AM transceiver is all you ever need. Has maximum legal output power and is equipped with all current marine channels. There's even provision for any future ones. Complete with microphone, bracket and full instruction.

- All current marine channels
- Maximum legal power
- So simple even a child can use it!
- The perfect set for small boats
- DOC Approved: approval no 244029

Cat. D-1405

Unbelievable! **\$129**
Yours for just

VHF Marine Transceiver

\$399

Amazing low price

DOC APPROVAL No. 274C018

Cat D-1404

With 12 programmable channels: no crystals to buy. Now your craft can have the unrivalled flexibility of VHF marine - without breaking the bank.

And because it's a hand-held, it goes where you go: take it home when you dock, take it in the lifeboat if you must... measures a tiny 160 x 60 x 35mm (plus rubber duckie antenna).

Huge 12 channel capacity: more than enough for all local area work. And if you do happen to cruise the coast, you can re-program to suit your area. It's simple. Features:

- 0.5/2.5W output power (switchable)
- High sensitivity: better than 0.25uV (12dB SINAD)
- Capable of all VHF marine channels
- Complete with Nicad battery & charger.

5W 6 Channel Transceiver

\$169

Don't leave shore without one!

A top quality high power hand-held from Uniden: the world's largest manufacturer of 27MHz equipment.

All the power and performance of a fixed transceiver - in a transceiver you can take home with you. (It won't be pinched from your boat!) Maximum legal power, and all 6 channels fitted with 27MHz marine frequencies. Nothing more to buy!

And you can connect a boat antenna and power for maximum performance if you wish: external antenna and power sockets fitted.

Doc Approved: No 242M0172 Also approved for CB use (DOC 249A022 with appropriate CB crystals fitted).

Cat D-1125

3W 3 Channel Transceiver

At this price, you can't afford to be without one!

Medium power, medium price - but top performer! A new model, exclusive to Dick Smith Electronics, with a multitude of uses. Approved for bushwalking, etc with general frequency of 27.620MHz included in channel 1. Other channels left open for your choices. Great for fisherman, too: keep in touch (just in case!)

Cat D-1106

\$99

DOC Approval No. 249A072

1W 3 Ch Safety Transceiver

Our most popular hand held.

Nice and small for the bushwalker, rock-hopper, fisherman or hiker to keep in the back-pack: just in case! Fitted with bushwalking frequency of 27.620, two other channels left open for your choice of crystals (take about ten seconds to fit!) Not normally used on marine band, but in an emergency you can use anything! Keep one in the tackle box!

Cat D-1102

\$75

DOC Approval No. 242H0108

NE ELECTRONICS

Every boat outside
should have this
LIFESAVER!



EPIRB

Emergency Position Indicating Radio Beacon.

Your most valuable companion at sea! It could save your life! EPIRB stands for Emergency Position Indicating Radio Beacon. When you get into trouble, this transmits a signal on both the commercial and military emergency radio frequencies. Any aircraft on emergency watch (ie when they're looking for you!!!) within range would hear the beacon, and from it, work out your position. It's absolutely essential on any craft going to sea (it's compulsory on many racing yachts!)

\$149

Cat D-1406



Depth Sounder & Fish Finder

A MUST for all small craft - from a fishing dinghy to the QE2. Find out where the bottom is (thud) or where that rock is (splat). Or even where that elusive school of fish is! Simple to install, very easy to use - and you can quickly remove it so someone else won't while you're away from the boat. LED display gives four scales up to 80 metres. Variable gain (sensitivity) control for minimum errors.

Supplied complete with through-hull transducer (may be mounted inside the hull - instructions included) plus cable. Battery operated.

\$129

Cat Y-3050

FLOAT BRACKET TO SUIT
For towing behind boat: no drilling necessary! Great for small boats.
Cat Y-3052 \$9.95



Protect your boat with a DSE

Boat Alarm

Boats are pretty 'hot' property - and easy targets! This versatile and durable alarm for marine applications is perhaps the most complete boat alarm offered today! Comes complete with: High impact resistant strobe light. Electronic siren. 4 sets of magnetic switches for NO & NC applications. Two lock switches with brackets. Wiring and complete instruction. In addition the DS alarm has multiple protection zones so you can extend the system to meet your requirements... Great Value!



- Protect your boat
- Easy fitting
- Expandable to suit your needs.

\$169

Cat L-5098

MARINE TWO-WAY ANTENNAS

27MHz Helical: no ground plane required

MARINE HELICAL ANTENNA
Now! A whip antenna for glass, wood & cement boats. This helical antenna doesn't need a ground plane. Helical whip complete with mounting base, cable & simulated ground plane. Great value when you're on the receiving end!
Cat D-4070

\$54⁵⁰

27MHz Swordfish: half wave performer!

Made of tough, resilient fibreglass, this half-wave antenna doesn't need a metal 'ground plane': you can use it on grp, cement, wooden, steel - or any type of hull.

And it comes with our deluxe 'any-which-way' base (as shown below) which mounts perfectly on any angle. It has a quick release lever to lower the antenna for bridges, trees, marinas, low flying aircraft...

Complete with base, co-ax cable and tuning box. Cat D-4071

\$62⁵⁰

Any-which-way' Base

This antenna base, as used with the Two Way Marine Antenna, can be used with any 3/8" 24 TPI whip antenna. It's strong and very adjustable with a quick release lever to lower the antenna for bridges, trees, etc. It can be mounted on any surface. Cat D-4057

\$29⁹⁰

VHF Marine Whip for 156 MHz

Antenna to suit VHF Marine Transceiver (D-1401). Also includes the special (D-4057) antenna base supplied - as seen above.
Cat D-4016

\$67⁵⁰

Man Overboard! Hand Held strobe

BY EVEREADY

MAN OVERBOARD! But where is he? With a waterproof strobe on his jacket, he's easy to spot from miles away. Intense white flash lasts for hours - a must for all ocean going craft (especially racing yachts!) Don't pay \$49 or even more. Huge scoop purchase means our price is way way below normal cost!
Cat Y-1085

\$9⁹⁵

JUST

'Yachties' Electronic Stopwatch

Just the shot for races, timing starts, laps, etc, etc. Huge LCD display for instant recognition, handy size with neck lanyard included. Also double as highly accurate quartz LCD clock: you can use the stopwatch or lap timing function without losing clock time.
Cat Y-1041

\$28⁵⁰



Xtals for Hand Helds



ALL \$7⁹⁵ EA

Standard transmit/receive pairs for the popular 27MHz marine channels. Simply plug into the hand-held (also suit older style in-dash transceivers).

27.550 D-6055	27.910 D-6091
27.620 D-6062	27.940 D-6094
27.860 D-6086	27.960 D-6096
27.880 D-6088	27.980 D-6098
27.900 D-6090	

Australian Marine Radio Handbook

This book
could save a
life - yours!



Everything you need to know about selecting, fitting and using marine radio. Complete with maps, charts and times of monitoring stations, OTC's Seaphone service, Rescue organisations and much more. If you have a boat of any type, you should own a copy of this book!

Cat B-9604

\$8⁹⁵

TV FM ANTENNAS TV FM ANTE

VHF...UHF...FM...
We've got
the lot at low,
low prices

NEED A ROTATOR?

If you want to tune in a number of channels, you'll probably get the best reception with a rotator. Then you can aim your antenna directly at the tower - or even find a position to minimise ghosting. You'll find two great rotators - ideal for TV antennas in the amateur radio section on page 73.

For boat, caravan, camper etc.



Go-Anywhere FM/TV

Here's a go anywhere TV/FM antenna that's small enough to be packed up and put in the camper or van. It even comes with a special 'gutter gripper' bracket for caravan use, plus a mini mast and 7 metres of 300 ohm ribbon. Single folded dipole for maximum performance over wide frequency range; suits horizontal or vertical mounting. Cat. L-4026

5dB gain

300 ohms impedance

\$39⁹⁵



NEW FOR 85

UHF/VHF ANTENNA WITH REFLECTOR

UHF TV is here! And here's one antenna to suit both UHF & VHF. High gain with corner reflector for top UHF performance is ideal for fringe areas. With only one lead-in you get top performance- Maximum gain/Minimum ghosting. So easy to erect and there's no special tools needed! Cat. L-4018

7.5dB gain

ONLY \$79⁹⁵

How's your UHF picture?

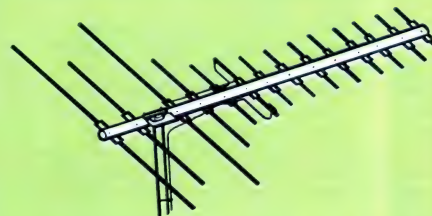


High Gain UHF TV Antenna

If you're finding trouble picking up the UHF stations, try putting up a new UHF antenna. Your problems could be solved - for less than \$30. And it's far less than 'getting the man out' to have a look at the supposedly crook TV set! Another Dick Smith quality import, this UHF antenna is designed to cover the entire Australian UHF TV band - when it is fully utilised. It provides high gain (10.4dB), with a very high front to back ratio (24dB) - very important on UHF. It also features a variable mounting clamp so antenna can be aimed precisely at the transmitter even from low down. Cat. L-4028

300 ohms impedance

\$22⁵⁰

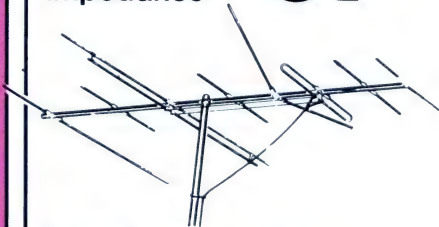


Combined UHF/VHF Antenna

Why put up two antennas when one antenna will give you both UHF and VHF signals? One of our most popular antennas. Has the latest 14 element design which needs just one feed line. Suits 300 ohm ribbon. This one's just waiting for 0-28 to drop the '0'. Easy to install on existing mast. Comes complete with mast clamp. Great value for dual purpose antenna! Cat. L-4020

6dB gain

ONLY \$59⁹⁵

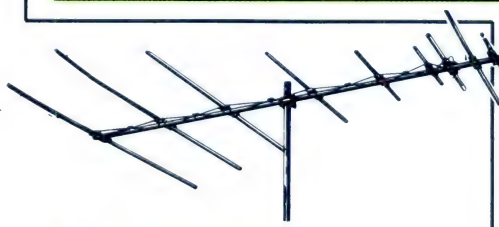


Metropolitan High Gain

This antenna has proven to be our biggest seller. Extremely popular in the metropolitan areas and near fringe areas, because it has been designed to give maximum gain on channels 0,2,7,9,& 10. Complete with mast clamps, suits twin lead with its 300 ohms impedance. Use a balun if you want to use 75 ohm coax cable with this antenna. Cat. L-4022

9dB gain

\$49⁹⁵

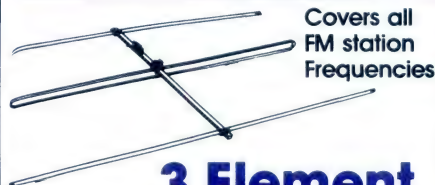


Metropolitan Ghost Killer

The largest model in our range. Of the enormously successful log periodic design, this broad band antenna has high gain, and high front-to-back ratio (very important in cutting out unwanted signals or ghosts from the sides or the rear of the antenna). It's the ideal antenna for all channel reception in the most difficult areas - even on the fringe. Cat. L-4030

9dB gain

\$74⁹⁵



Covers all FM station Frequencies

3 Element FM Antenna

If you want top performance from your FM tuner, you're going to need an FM antenna. But most FM antennas cost a fortune - so most people put up with the ribbon type. That's fine if you live close to the transmitter, but what if you don't? We have this 3 element FM antenna manufactured overseas, so it costs a lot less than other antennas. But its performance is just as good as antennas you'd pay twice as much for ... and more! Very easy to erect, light weight, and with 300 ohms impedance, suits almost all FM receivers. Try it: you'll be surprised how good FM sound is. Cat. L-4064

\$19⁹⁵

NEW FOR 85

Everything you need to mount your Antenna

8mm Turnbuckles

Get the correct tension on your guy wires. 8mm turnbuckle is 94mm long, standard hook and eye ends. Heavily plated for long corrosion-free life.

Cat L-4544

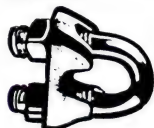


\$1.30

Wire Clamps

Grips guy wires tight: stops cables parting or fraying, too. Mini 'saddle clamp' assembly, holds wire up to 7mm.

Cat L-4522



49¢

Guy Wire

7 strand x 0.9mm, heavily plated steel guy wire for all antenna and mast support work. Breaking strain over ten tonnes.

Cat L-4564



16¢
per metre.

30mm guy rings

Takes either three-way or four-way guying. Circular (donut) style ring with holes for thimbles. Overall size 100mm diameter, suits mast diameters up to 32.5mm.

Cat L-4524

Shown with L-4530 thimbles in place (not supplied)



\$1.20

35mm Ferrule

Used to hold guy ring in place. Takes mast diameter up to 35mm, heavily galvanised steel tube 50mm long.

Cat L-4526

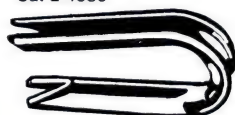


59¢

8mm Thimbles

Use wherever guy wires have to turn corners or tie off (eg on guy rings or turnbuckles. Makes the wire take a larger diameter, prevents chaffing and adds to overall safety.

Cat L-4530



50¢

30mm Guy Clamps

Simple saddle clamp to hold the guy assembly in one place. For maximum security and safety.

Cat L-4528



\$2.40

28 cm Wallmount



28cm long, can be used for wall or barge mounting of vertical masts up to 5cm diameter. Complete with saddle clamp assembly. Cat. L-4152

\$5.95

69cm Wallmount



69cm long, used for mounting vertical mast sections up to 5cm in diameter. Complete with saddle clamp assembly. Cat. L-4153

\$6.95

Chimney Mount



This is a double arm, single strap, easy to mount unit. Complete mast mount assembly. Cat. L-4154

\$14.95

Barge-board Mount



Designed to mount any TV antenna from a vertical surface, barge-board, wall, chimney, etc. 139cm long. (Hot dipped galvanised to prevent corrosion.)

Cat. L-4150

\$9.00

Saddle Clamp



GALVANISED FOR LONG, LONG LIFE!

\$1.55

For holding two pieces at right angles: eg. mast pipe onto mount, or antenna onto mast pipe. U bolt & V clamp. Cat L-4165

Standoff Assembly



\$1.15

Complete with standoff and strap assembly. Used for standing cable off mast sections. 8.8cm long. Holds ribbon or coax. Cat L-4512

Woodscrew Stand-Off

50¢

Designed for wooden walls, facias, window frames, etc. 19cm long, suits either co-ax cable or 300 ohm ribbon. Absolutely essential if you want minimum ghosting, minimum loss.

Cat L-4511

Nail-in Cable Clamps Ribbon Type

20¢

Suitable for running flat ribbon cables on walls, skirting boards etc. Gives a neat professional job. Cat. L-4514

Coax Type

6¢

As above but suitable for coaxial cable. Cat. L-4515

Coax Clamp Bargain Pack

As above, but 25 in pack. About the right number for a proper installation. And look how much you save!

Cat L-4516

75¢

9 metre telescopic mast

Just what you need to get the TV antenna up above the roof, up above the power lines, up above the interference. Complete assembly - guy rings and thimbles included. Ready to put up and enjoy better reception.

Mast will accept our rotator (see page 73) if you want the best reception. Cat L-4520

NEW FOR 85

\$84.95

TV Mast Pipe (app. 2.4m)

This is a 2.44m mast section galvanised and rustproof. A conventional way of mounting your TV antenna. Ideal for use with any wall mounts and chimney mounts illustrated on the left of this page! Diameter: 27.5mm. Cat. L-4156

\$7.50



ANTENNAS TV, FM ANTENNAS



DELUXE VIDEO PROCESSOR

Disappointed by the fuzzy picture you get from some video tapes? This deluxe Video Processor lets you make the picture crisper and clearer. Dual 'Detail' and 'Core' controls allow optimum picture enhancement, plus a 'Stabilise' control to let you get stable pictures from Copyguarded tapes. 'Mode switch' lets you bypass all processing to check the original signal.

Takes the direct video signal from your VCR, and provides three processed video outputs for distribution. Handles audio, too. Includes a high-quality RF modulator with output on Australian VHF channel 1 or 2 (switchable).

Elegantly styled case features stained wooden ends. Suitable for both VHS and Beta. Needs 12V/150mA DC power supply - our M-9526 supply is ideal.

Cat Y-8510

GREAT VALUE! \$149⁵⁰

75 ohm fittings

Wall Socket

Mounts on wall or skirting board. Mount a number around the house for portable TV viewing. Cat L-4504

\$3⁰⁰



In Line Joiner 'Two-way' socket

P-2070 ... 1-9 ... 10 up \$1.10

\$1²⁰



Panel Socket

P-2040 ... 1-9 ... 10 up \$1.10

\$1²⁰



Plastic Line Socket

P-2031 ... 1-9 ... 10 up 95¢

\$1



Plastic Line Plug

P-2021 ... 1-9 ... 10 up 60¢

65¢



Metal 75 ohm TV coax line socket

P-2030 ... 1-9 ... 10 up \$1.60

\$1⁷⁰



No soldering required

Metal 75 ohm coax plug

P-2020 ... 1-9 ... 10 up \$1.20

\$1⁵⁰



No soldering required

Wall Plate with 75 ohm socket

Plastic wall plate with built-in 75 ohm TV connector. Can also be used as a 75 ohm splitter. Cat P2042 10 up \$3.25



\$3⁵⁰

BNC Line Plug

P-2210 ... 1-9 ... Suitable for RG58RU cable 10 up \$2.00

\$2²⁵



BNC Panel Socket

Accepts P2210 P-2220 ... 1-9 ... 10 up \$2.00

\$2²⁵



300 ohm fittings Ribbon Wall Plug and Socket

Designed to mount on wall or skirting board. Complete with mounting screws and plug. Cat P-2080 10 up \$1.85



\$1⁹⁵

300 Ohm Plug

An individual plug as used in the above socket. Cat. P-2082 10 up 90¢



95¢

VHS VIDEO-TAPE REWINDER



What convenience! The Dick Smith Electronics VHS tape rewinder means no more waiting for the tape to rewind before you can start watching the movie! It's great when you want to rewind a tape ready for recording, too: it's much, much faster than using the VCR to rewind. And the VCR itself gets less use - so it could last longer! Tape automatically ejects when fully re-wound; operates on 240V and is activated only when you put a cassette in. Suit VHS tapes only.

Cat Y-8515

\$49⁹⁵

VHS VIDEO HEAD CLEANING TAPE

Non - abrasive (fluid) type.

Essential for the video buff! The video head cleaner will effectively clean the heads on your VCR, eliminating hiss/noise and improving picture quality. Comes complete with cleaning fluid and instructions. See the difference! (Suits VHS machines only).

\$9⁹⁵

Cat. C-7100



Economy Indoor Antenna

If you're lucky enough to live in a strong signal area, you'll probably get by with one of these spiral antennas, even with colour. Don't expect miracles of you're out of sight of the transmitter, (it is quite probable that you will require an outside antenna like those on page 60.)

Cat. L-4010

300 ohms impedance

ONLY \$7⁹⁵



Indoor Ribbon TV/FM Antenna

A simple flexible dipole antenna suitable for both FM and TV reception. It is best suited to primary reception areas where it is unnecessary for a full scale outside system. It is ideal for use in situations where space is at a premium. Simply connect to your terminals, find the best reception position and then secure with thumb tacks or adhesive.

Cat. L-4060

300 ohms impedance

JUST \$1⁹⁵

TV, FM ANTENNAS

TV CABLE

300 Ohm Flat Ribbon

Low loss 300 ohm ribbon for good signal areas.

Cat. W-2070

per metre **22¢** **\$19**

Bulk Price for 100m roll

75 Ohm Coaxial Cable

Low loss coax, ideal for colour installations. Black coloured for long life.

Cat. W-2080

per metre **45¢** **\$40**

Bulk Price for 100m roll:

Video to Video Cable Set

Own a video cassette? Want to dub tapes? You **must** have one of these amazing cable sets. Doesn't matter what type...VHS, Beta...Umatic...Philips... this suits any to any! Comes with 2 metres audio/video cable with phono adaptors to suit UHF (PL259), BNC, 6.5mm, 5 pin DIN and 6 pin DIN. Every video enthusiast should have one! Cat. W-1287



\$21⁹⁵

75 ohm TV cable

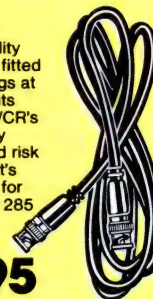
2m quality 75 ohm coax fitted with standard TV coax plugs. Ideal for use in flats, units, etc. with wall outlet. Cat. L-4506



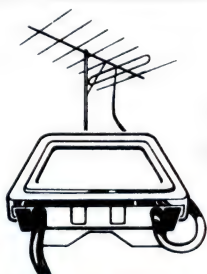
\$3²⁵

BNC Video Cable

2 metres quality 75 ohm coax fitted with BNC plugs at each end. Suits many of the VCR's available. Why make one and risk shorts when it's already done for you? Cat. W-1285



\$6⁹⁵



Crook Pic? Fix it quick! with a

Mast Head Amplifier

Poor signal? Lousy picture? Don't put up with a moment longer. The Dick Smith masthead amplifier can make an unbelievable difference. Amplifies the signal right at the antenna - so you can use a longer lead-in too. Latest model has even more advanced circuitry for optimum performance.

Cat. L-4200

- 40-400MHz bandwidth (Covers VHF TV PLUS FM radio.)
- 24dB gain
- 75 ohms input and output (suits co-ax cable)
- 12V AC powered
- Zero gain at 27 MHz (ideal for CB interference suppression!)

Includes power supply to suit

ONLY \$49⁹⁵



IN-LINE AMP VCR BOOSTER

The output signal from video recorders is often too low for optimum performance on many television sets. Or you may find degradation when trying to run more than one TV. The solution: just connect this nifty little in-line amplifier between your VCR & TV. It boosts the signal level to give clearer, crisper viewing. And the best part is it simply plugs in to your existing system.

Also ideal for boosting signal on long co-ax feed lines.

Cat L-4202

- 5 - 950MHz
- 10dB gain
- Requires just 9V at 100mA (our M-9525 is ideal).

ONLY \$29⁹⁵

Splitter/Couplers

If you want to use one antenna on several sets, or use two or more antennas on the same set, you need a splitter/combiner. Connected one way they act as a splitter (one antenna in, multiple out); reverse the connections for a combiner (several antennas in, single out).

4-way Splitter for 300 ohm ribbon

Handles either colour or black and white TV with absolute minimum loss of signal strength even when all sets are operating at the same time. Compact plastic case can be mounted at any convenient location near antenna lead. 300 ohms input/output impedance. **NOTE:**

If all inputs are not being used at once, a 330 ohm resistor should be placed across the unused outputs. Covers 50-890 MHz.

Cat L-4420 (10 up ... \$5.00)

2-way 300 ohm splitter

As above but 2 sets only. Covers 50-890 MHz.

Cat L-4418 (10 up ... \$2.90)

4-way 75 ohm splitter

This splitter is housed in an attractive plastic box with snap lid. It features nickel plated easy to connect screw terminals. It can be mounted in any position.

Used to operate up to 4 TV sets from one aerial when using 75 ohm coaxial cable. Covers 50-890MHz. Isolation 30dB.

NOTE: If all outputs are not being used at once a 68 ohm resistor should be placed across the unused outputs.

Cat L-4474 (10 up ... \$5.10)

Indoor 75 ohm Splitter

Similar to L-4474, but for two sets only. Covers 50-890 MHz. Isolation 25 dB. Insertion loss 3.5dB. Cat. L-4472

10 up ... \$3.80

2-way Co-ax Splitter

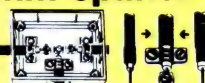
A nifty little splitter/combiner for indoor use. Fitted with standard TV co-ax plugs & sockets just plug it in without any messy wiring. Normally used for 2 TV sets from one antenna, but can also be used 'backwards' to combine two antennas into one TV set. Cat L-4270 10.....\$1.60



\$5⁵⁰



\$5⁷⁵



\$4²⁵



\$1⁹⁸

Baluns

These are special radio frequency transformers used for converting unbalanced or mismatched lines and terminals to balanced and matched operation. Used in aerial-set or set-aerial conversion from 300 ohms to 75 ohms (or vice versa).

Outdoor Aerial Balun

This balun is designed for outside use with your existing aerial to allow you to convert to coaxial cable. 300 ohm to 75 ohm. It comes complete with coaxial plug, connector and cover. Cat L-4452 10 up.....\$2.25



\$2⁹⁵

TV Game Balun

Makes it easy to use your colour TV game with a black and white set. Spade lugs make connections simple, no soldering required. Excellent value. Cat. L-4454 10 up \$1.75



\$2²⁵

Universal Balun

The universal balun - has 300 ohm screw terminals & 75 ohm coaxial plug - can be used either way round. Ideal for the person requiring a balun but not really knowing which type! Cat L-4456 10 up\$1.75



\$2²⁵

TV Game Computer Switch Box/Balun

If you have a TV game you're probably getting sick of swapping cables everytime you want to use it... Problem solved with this switch box/balun! Switch between 2 inputs - and it gives you the choice of 75 or 300 ohm input. Cat L-4500



\$4⁵⁰

75-300 ohms Indoor Balun

\$2⁹⁵

This balun correctly matches 75 ohms coaxial cable to the 300 ohm terminals of your TV set or FM tuner. Covers 50-890 MHz with low insertion loss. This unit can be used as an outside aerial balun if made weatherproof with plastic tape etc. Cat. L-4464



COMMUNICATIONS RECEIVER

Buy now, pay later . . .

Any of our stores will be glad to discuss easy term payments (to finance company approved applicants). Just ask!



All band, all mode general coverage receiver - FRG-8800

All mode/selectable IF&BW
Multi Scanner
8 Bit Microprocessor
S/SINPO Graphic Indicator
Dual 24-hour Clock
CAT System Computer Control
Wide-band VHF option



FRV-8800 VHF Frequency Converter

Fits right inside case - complete with its own telescopic antenna. Frequency range 118 - 174MHz Cat. D-2823

\$149

FRA-7700 Active Antenna

Great for flat dwellers! No need for an outside antenna and preamp will pull in stations you didn't think possible! Cat D-2845

\$89⁵⁰

FRT-7700 Antenna Coupler

Ensures best performance from all types of antennas. A must if your antenna is not low impedance. Cat D-2843

\$95

FRG-8800 DC Kit

Allows operation of your FRG-8800 on 12V DC. Great for field operation, monitoring, etc. Cat. D-2822

\$2⁵⁰

Here it is: the receiver everyone's been waiting for. It's the brilliant new FRG-8800 from Yaesu - the world's leading manufacturer of amateur radio equipment. With specifications to more than match its outstanding looks, the FRG-8800 is a worthy successor to the rest of the 'frog' series. But this one has more: much more:

10 memories inbuilt - nothing extra to buy (they even remember the mode and filter!) And digital frequency entry as well as standard knob tuning. Provision for a VHF converter inside the receiver. CAT control capability. And much, much more.

Ask for a copy of the free FRG-8800 colour brochure.

Two models to choose from:

FRG-8800 HF

150kHz to 30MHz. Cat. D-2820

\$799

FRG-8800 SW

2MHz to 30MHz Cat. D-2821

\$749

AM/FM/CB/SW/VHF with inbuilt Radio D.F.

Top value for the avid radio listener - or the boat owner who wants to know just where he is! This quality radio receiver has a built-in radio direction finder to pinpoint your position against am radio stations.

Plus you get 6 bands including all 40 CB channels plus shortwave AND VHF! Operates from either mains or batteries (not inc.) and can even double as a PA amplifier with optional microphone! You also get not just one, not two but three different manuals - including a full SW listening guide.

- AM Broadcast Band
- FM Broadcast Band
- CB Band (26.94 - 27.46MHz)
- VHF Bands (59 - 218MHz)
- Shortwave Bands (3.9 - 12.5MHz)



Cat D-2832

\$99

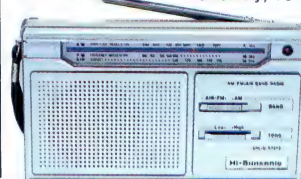
Air Band VHF Radio & AM/FM!

You've probably wondered what goes on, what pilots and air traffic controllers talk to each other about... Wonder no more! This budget aircraft band radio tunes the entire band, so you don't miss a thing. It also covers the normal AM broadcast band too, so you won't miss out there either! Operates from 4 penlight batteries (supplied) with telescopic whip antenna for aircraft band and internal ferrite rod for broadcast band.

Specifications: Ranges: 530 - 1600kHz; and 108 - 174MHz. IF: 455kHz and 10.7MHz. Output power: 450mW max. Speaker: 6.4cm. Power source: 6V DC (4 penlight cells). Circuitry: 10 transistors and 7 diodes.

Size: 22 x 11 x 5cm.

Cat D-2836



\$29⁵⁰

For the Short Wave listener:

MW/FM/SW 6 BAND

The economic receiver with the deluxe features. Like 6 bands covering standard AM & FM broadcast PLUS 4 shortwave bands: 2.3 - 4.1MHz, 4 - 7.5MHz, 7.5 - 15MHz and 15-26MHz. And a protective 'soft feel' carry case. Slide switches and controls (just like it's big brother at right). And best of all, it comes complete with quality stereo headphones - at no extra charge!

Compare the features; compare the quality. You won't buy better!

Cat D-2835



\$69

MW/FM/SW 9 BAND

Tune in to the world brilliantly with this incredible dual conversion 9-band receiver. Offers superb sensitivity, selectivity, interference rejection and stability. AND... deluxe features such as: A special ceramic filter to cut interference from nearby frequencies; AM, FM and all 7 SW bands between 5.95 and 21.75MHz are spread out on the dial for ease of tuning. For optimum sound and convenience, a tone switch, LED tuning indicator, telescopic antenna, earphone jack and a prop-stand are built in. Includes earphone, external antenna wire, protective case and full instructions. Colossal value! Cat D-2837



\$119



Find out all about this fantastic hobby!

Get into the world's fastest growing hobby... scanning! Dick Smith's Australian Radio Frequency Handbook will tell you what's what, and even more importantly, who's who - and where to find them! Cat B-9600

\$8⁹⁵

S & SCANNERS

Bearcat 201FB

... all bands including aircraft



Now a budget scanner which will cover just about everything you could possibly want. Its 9 bands include aircraft, military, business, emergency services, amateurs, UHF CB, taxis, tow trucks, etc, etc.

Anything that's not there is simply not worth listening to!

With 16 programmable channels plus scan and search facilities it will find the station you want and then keep it for later listening. One piece keyboard features push-button operation for all functions except volume and squelch.

Cat D-2802

● Covers the following frequencies (MHz): 66 - 88, 118 - 136, 138 - 174, 399 - 499 in nine bands.

● Operates from external 12V or from mains with optional plug-pack adaptor.

● Patented Track Tuning and Selective Scan Delay

● 16 channel memory, full scan/search facilities.

ONLY \$399

REGENCY HX-2000 Hand Held Scanner

NEW FOR 85



At last! A hand-held, go-anywhere scanner that doesn't sacrifice any of the performance of the 'fixed' type. In fact, it does better than many other scanners: up to 525 MHz including aircraft band! and it gives you 20 memory channels!

With a sensitivity of 0.5uV VHF, 0.7uV UHF and +/- 7.5kHz (6dB) selectivity you can see that this scanner is ready for ACTION! And its priority, scan and search facilities mean you won't miss anything!

Complete with whip antenna and comprehensive instruction manual. Cat. D-2815

Specifications:

- 60-89, 118-136, 138-174, 436-490 and 490-525 MHz
- Search increments 5, 10 & 12.5 kHz (VHF) and 12.5 kHz UHF
- Power requirements 4.8V (Nicsads) or 6V (dry cell or external)
- Just 77 x 175 x 39 mm

NiCad Batteries Included!

ALL THIS FOR ONLY \$399

Hear more... hear better. Helical Dipole Scanner Antenna

Now there's no excuse not to hear everything on your scanner - not when you have this scanner antenna.

Designed by a scanner expert especially to suit the bandwidth of today's scanners, it features performance approximately equal to a quarter wave in free space.

Covers all major scanner bands - 70 to 174 and 400 to 500MHz, with easy mounting via the eye hook (or if you prefer, can be mounted on mast with 50 or 75mm stainless steel hose clamps).

Overall length is 155mm, and it weighs just 1.5kg. Fitted with 3.5m cable, terminated in standard car-radio type co-ax plug (as used by 99% of scanners).

Cat D-4432

Get the most from your scanner!

\$57⁵⁰



Shortwave Antenna Kit

\$15⁹⁵

WHY SPEND HUNDREDS OF DOLLARS ON A GOOD RECEIVER IF YOU ARE ONLY USING A PIECE OF STRING FOR AN ANTENNA?

Get the best reception from your receiver with this high quality short wave antenna -

- Designed especially for Dick Smith by a short wave expert.
- Complete and ready to assemble.
- Needs no soldering.
- Instructions included.

Cat K-3490

And new from Bearcat:



DX-1000 Receiver

What a receiver! From Bearcat: the people who brought you the world's best scanners comes the DX-1000 - a magnificent performer by any standards.

With frequency coverage from 10 kHz to 30 MHz (yes, you read that correctly!) and all modes, 10 channel memory, twin noise blankers (including an effective Woodpecker blanker), variable tuning rate, digital or dial frequency selection, digital

frequency display... it represents outstanding value for money!

It's got magnificent specifications, too:

- 1.0uV AM & 0.3uV SSB sensitivity on all HF bands
- 70dB Image ratio above 150kHz
- Selectivity: -6dB @ 12kHz & -50dB @ 20kHz, -6dB @ 6kHz & -50dB @ 12kHz, and -6dB @ 2.7kHz & -4.5kHz
- 50 and 500 ohm antenna inputs
- 12V DC operated (Internal cells or external 12V or AC adaptor)

Cat D-2830

NEW FOR 85

ONLY \$699



10 Good reasons to buy your YAESU from Dick Smith Electronics

1:

You're buying from factory authorised agents - with all the back-up and support that this entails. The very latest models. The very latest technical information. The very latest service. All direct from the factory: not off a slow boat via who-knows-where.

2:

You'll get genuine, factory-fresh equipment intended by the manufacturer for Australian conditions. You'll get English instruction manuals. You'll get Australian power cables. You'll get guarantees valid in Australia. In short, you'll get the right goods.

3:

You'll get the goods: Probably the most important reason of all. We won't make you wait weeks - sometimes months - after you pay your money and try to 'snow' you with excuses.

4:

You'll get the back-up you need. Our service department holds around three hundred thousand dollar's worth of spare parts PLUS have instant access to our warehouse holding over five million dollar's worth! And if all that fails, we have **instant** access to Yaesu-Musen's immense spare parts stock!

5:

You'll get goods with their credentials fully documented. No 'fallen of the back of a truck'. No questionable practices regarding their importation, duty, sales tax, etc, etc. All legal, all above board.

6:

You'll get a guarantee: for a full 12 months. And you get a warranty card to fill in and send back to us - as legitimate agents for the manufacturer. Elsewhere, they might tell you that you get a 12 month warranty or something. Then you look at the box and it's marked 'Warranty Policy Valid in Japan Only'. Who's kidding whom?

7:

You'll **also** get our exclusive 7-day satisfaction guarantee as well (14 days if you buy through DSXpress - our mail order service.) If you're not absolutely delighted, return your purchase within 7 days in original condition and packaging for a full refund. You'll owe nothing: not even an explanation.

8:

You'll deal with a company with a long and continuing commitment to the development and expansion of amateur radio in Australia. We've been selling and servicing Amateur Radio Equipment for most of our 17 years of operation; you're not dealing with some fly-by-nighter who's interested in making a quick buck then doing the old puff of blue smoke trick.

9:

You'll get friendly, expert help from your local Dick Smith Electronics store. We encourage our staff to obtain their amateur licences. So they can speak your language. They know what you mean when you talk technicalities. And best of all, you're not talking to someone at the other end of the country!

10: And we have more licenced amateurs than anyone else: **to serve you better!**

Ike Bain	Dick Smith Electronics Inc. President	VK2AIG
Garry Crapp	Research and Development Manager	VK2YBX
Ross Tester	Amateur Radio Products Manager	VK2KRT
Ray Dickinson	DSD (Wholesale Division) Manager	VK2LD
Tony Brown	Quality Control Manager	VK2KTB
Ian Lindquist	Yaesu Service Supervisor	VK2CEA
Peter Blume	Yaesu Stock Supervisor	VK2XKB
James Cotterill	Yaesu Service Computer Service	VK2ZYC
David Wales	Auditor	VK2KWD
Tony di Bona	Accounts	VK2NXI
Michelle Huckle	Canberra	VK2PAI
Andrew Conroy	North Ryde	VK1CE
Chris Ayres	Gore Hill	VK2YUS
Stuart Cameron	Bridge Street, Sydney	VK2ADE
Martin Lansdowne	Hornsby	VK2PJW
Chris Hodgeman	Blacktown	VK2ZS
Chad Coster	Chatswood Chase	VK2PWI
Edwin Baynash	Penrith	VK2PIV
Steve Sanger	Liverpool	VK6ZTT
Gordon Markovic	Blakehurst	VK2PEO
Leslie Ayling	Brookvale	VK2VCY
Joseph Lynch	Railway Square	VK2VIR
David Cogan	Newcastle	VK2NLC
Bob Dyball	Newcastle	VK2YLC
Michael Grebert	Newcastle	VK2BYG
Tony Stone	Wollongong	VK2VPR
Walter Bagnarol	Wollongong	VK2YWJ
Mark Richmond	Tamworth	VK2MMM
Allan Clark	Elizabeth St., Melbourne	VK3CAC
Tony Snook	Geelong	VK3AAC
Syd McKittrick	Rockhampton	VK4ZMK
Nigel Jays	Adelaide	VK5ZZF

New Models for 1985

The ultimate in convenience - **2m/70cm FT-2700RH**



Simply superb: the brand-new FT-2700RH from Yaesu. The best of both worlds - two metres **and** seventy centimetres in one unit. Why combined? With all the garbage on two lately, many operators have gone upstairs. Now two is being cleaned up (thank heavens!) a lot are coming back. But they don't want to lose seventy! The answer: the FT2700RH.

- 25 watts continuous on both bands
- Two 4-bit CPU's for complete control
- Wide angle LCD display shows everything!
- Includes scanning microphone and mobile mounting bracket.

Easy, one-key band switching. Yaesu's programmable memory scan. Priority channels. 10 memory channels. Dual VFO's. Dual independent front ends, local synthesisers, IF's and transmitter RF stages. Everything you need for delightfully easy operation on both bands. And yes, full duplex crossbanding is child's play.

Cat. D-3515

**VIRTUALLY TWO TRANSCEIVERS
IN ONE PACKAGE!**



\$945

Buy now, pay later . . .

Any of our stores will be glad to discuss easy term payments (to finance company approved applicants). Just ask!

Economy 70cm

FT-703R

Here's value! The perfect 70cm hand-held for the amateur who doesn't need all the bells and whistles: Yaesu's new FT-703.

NEW FOR 85

\$479

Cat D-3508

Really simple operation with three thumbwheel switches setting frequency (full 430-440 MHz coverage) and volume, squelch controls and high/low power switch on the top panel, along with external microphone and earphone sockets.

Standard repeater offset switch selectable on rear panel, along with the VOX switch (VOX control circuitry inbuilt, VOX operation with external microphone such as YH-2 headset microphone - optional). Also has S/PO meter which makes the 703 ideal for fox-hunting and general purpose direction finding (external antennas can be plugged in by removing rubber ducky helical).

And the big news is the small size: just 65 x 34 x 153mm - small enough to keep in the briefcase when you're travelling!

- Wide operating voltage: 5.5-13V
- Ideal for mobile use, too!
- 2.5W output power (with 10.8V FNB-3 battery included. FNB-4 12V battery optional extra).

Push Button 70cm

FT-709R

And for those who do want all the bells and whistles...

NEW FOR 85

\$499

You can't go past the FT-709R! Absolutely everything that the serious UHF'er could ever want - all in a hand-held!

For a start, 10 memories to remember all your favourite repeaters and sked frequencies (covers the full 10MHz 430-440MHz band) with selective scan, priority scan, skip scan, busy or clear scan... band scanning - either full or within (your set) limits... Yaesu's unique Power Saver System: programmable receiver activation to check a selected channel. The battery lasts for much longer!

Add your choice of battery packs for high or low power operation: use the FNB-3 pack (10.8V, 425mAh) for 2.7w, FNB-4 (12V, 500mAh) for 3.5W. Or the FBA-5 'AA' Holder for standard cells (1.8W out) or even NiCads. (The FT-790R operates from 6 to 15V, so the latitude is there!)

- Full 10MHz coverage
- Microprocessor Controlled
- 10 memories, up to 3.7W out
- Complete with soft carry case, rubber ducky antenna

NB: Not supplied with batteries. Choose your own from the types above!

Cat D-3509

Mobile 70cm



FT-730R

In a word: superb!

NEW FOR 85

\$449

You'll love the flexibility that the FT-730 gives you. A full 10 watts output on the 430-440MHz band, with ten memories and two VFO's to play with!

Not just one, but two 4-bit microprocessors means total control - scanning for busy or clear channel (or completely manual scanning) is all controllable from the microphone. Plus priority channel operation, 'oddball' repeater splits or split frequency operation, etc. are all right at your fingertips. And the scanning steps are instantly changeable from 25kHz to 100kHz for slow/fast band scanning.

The tiny size of the FT-730R means it will fit just about anywhere: just 150 x 50 x 174mm! But the dial has been designed to make mobile operation easy - and safe. Large, clear display. Large edge meter for power output and signal strength. Push-buttons for most functions. And scanning controlled from the YM-47 microphone (supplied).

- Full 10W output
- 10 Memories, 2 VFO's
- Memory back-up

Cat D-3505



SB-10 PTT Switch Unit

Suitable for both the FT-2700RH and the FT-270/RH, the SB-10 allows virtual hands-free operation with the optional YH-2 headset earphone/microphone. A must for road safety!

Cat D-3519

\$34⁹⁵

FVS-1 Voice Synthesizer

What a great idea! Actually gives your FT-2700RH or FT-270R/RH a voice (yes, it's in English) to tell you frequency, VFO of memory selection, etc. This means you don't have to take your eyes off the road: it tells you!

Also a brilliant (no pun intended!!) idea for the visually impaired amateur.

Cat D-3518

NEW FOR 85



\$44⁹⁵

2m Mobiles



FT-270R

Low power version: Cat D-3516

\$649

FT-270RH

High power version Cat D-3517

\$699

Not just one, but two microprocessors to do everything for you except make coffee (they're working on that one!)

That's the new FT-270R/RH series of mobile 2m. Absolutely the latest word in flexibility and performance - including a model with 45 watts output! With 10 memories, dual VFO's and incredible scanning facilities, you're ready to take on the two metre pile-up: and win!

And this is packed into just 140 x 162 x 40mm: small enough to go anywhere!

Both models feature high/low power output (45/5W & 25/3W) so they're just right for the city or the bush!

- Unique die-cast duct-flow heatsink
- Amazingly small
- Huge LCD back-lit display

2m Choice:



At last! Total control, total flexibility in a hand-held! That's the new FT-209 series of 2 metre transceivers from Yaesu.

Your choice of transceiver/battery combination to give the power - and the features - that you want!

FT-209R

(lower power version)

Cat D-3502 **\$399**

FT-209RH

(high power version)

Cat D-3503 **\$449**

Features like: 10 memories for your favourite repeaters & simplex channels. And the memory even recalls the repeater split (no more forgetting to go « above 7000!)

Like keyboard entry for everything - frequency, memory, etc. etc. Like Yaesu's programmable Power Saver System (saves the battery for by activating the receiver every so often to check!) Like the huge LCD display that tells you frequency, repeater split, memory channel, etc. etc. Like a range of scanning options - band, limits, memories, etc. And much, much more.

And you can choose the power output you require simply by choosing the model and battery combination: from a huge 5W output with the FT-209RH and FNB-4 battery down to 1.8W with the FT-209R and FBA-5 with dry cell batteries.

NOTE: These hand-helds do not come with batteries. Choose from FNB-3, FNB-4 or FBA-5 on page 69.

AMATEUR RADIO AMATEUR



YAESU'S MASTERPIECE:

FT-757 GX THE RADIO

... 'without modesty, the best transceiver' That's what Amateur Radio Action magazine said about the FT757GX when it came out a little over twelve months ago.

When you look at the outstanding specifications of the FT757GX, then look at its size, you'll wonder how Yaesu managed to pack it all into the case.

Here's what it offers you:

- All mode AND all WARC HF bands built in (nothing extra to buy).
- 100 watts continuous output power (SSB/CW/FM)
- Twin VFO's, 8 memories, with complete control
- Triple conversion receiver covering full 0.5 to 30MHz
- 0.25uV sensitivity (SSB)
- Yaesu's famous IF shift/width passband control system
- Duct flow forced air cooling
- 4-bit microprocessor built in
- Iambic electronic keyer circuit built in

Please note: At time of going to press, the very poor Australian dollar exchange rate had forced many price increases. If the dollar appreciates during the time of this catalogue, our prices will be adjusted accordingly.



And much, much more besides! Feature for feature, it more than stacks up against the opposition. And it compares more than favourably on price, too.

Add Dick Smith Electronics' commitment to fully back every product we sell (a commitment you won't find elsewhere!), you have a winner with the FT757GX.

SPECIFICATIONS:

Coverage: TX 10, 12, 15, 17, 20, 30, 40, 80 & 160 metre bands; RX 0.5 - 30 MHz
Tuning steps: 10Hz & 500kHz
Emission types: LSB, USB, CW, AM & FM
Carrier Suppression: better than 40dB below peak o/p
Spurious Suppression: better than 50dB below peak o/p
3rd Order IM Distortion: better than -35dB below peak o/p (14MHz, 100W)
Rx Sensitivity: (1.53MHz; 10dB S+N/N) 0.25uV SSB, 0.16uV CW(N), 1.0uV AM, 0.6uV FM (12dB SINAD)
Image Rejection: Better than 70dB



FULLY AUTOMATIC ANTENNA COUPLER

When it says fully automatic, believe it! This amazing coupler actually has its own 4bit microprocessor to allow fast, accurate automatic impedance matching utilizing a modified piL network. Not only that, but it has a self-calculating (automatic) SWR meter AND an inbuilt inline RF wattmeter! It remembers which antenna you've selected for a particular band, along with the settings of the matching network (and stores the information in RAM) so when you go back to that band, everything is done for you: instantly. And if antenna conditions change while you're using it - it adjusts for you (and remembers the new settings!)

Can also be operated manually.

Cat D-2942

FC757AT

\$399

\$1195

Cat D-2940



YAESU FP757HD HEAVY DUTY

The FP757HD. HD means heavy duty - just what the avid dx'er wants. A supply that won't get hot under the collar when you have those long qso's. Plugs straight into the 757, also suitable for other 12V transceivers.

Rated at a superb 13.8V, 20A continuous (30 mins tx, 30 mins rx). That's some rag chew!

Cat D-2945

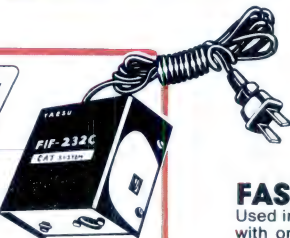
\$299

FIF232C INTERFACE

The CAT (Computer Aided Transceiver) System in the FT757GX allows use of an external micro computer to control the memory and operating frequency functions.

All you need is a standard RS232 port and this FIF232C interface. Full data information included.

Cat D-2943



\$99

FRB757 LINEAR RELAY BOX

For use with FT757GX and non QSK type linears where the switching voltage or current is too high for the internal FT757GX

Switching relay (50V or 4000mA).

Cat D-2946

\$16

FAS14R ANTENNA SWITCHING BOX

Used in conjunction with FC747AT for remote switching of up to four antennas with only one feedline and one control cable. Saves running long lengths of expensive coax! Cat-2947

\$119

MMB20 FT757GX MOBILE BRACKET

Designed specifically for the FT757GX, allows mobile mounting in either standing or slung position (eg under dash, or on transmission tunnel) giving three different angles of mount, too. Very securely holds a transceiver - ideal for offroad use (yes, it's that strong!).

Cat D-2949



\$49



Cat D-2920

Our top-of-the-line Yaesu transceiver! Incorporating an 8-bit microprocessor for the highest level of built-in computer control ever offered, this superb example of the state-of-the-art is what every amateur dreams about owning. From its triple conversion general coverage receiver through to its twelve memories and special scanning facilities... it's made for action. And even more: with the optional RS-232C interface (FIF-232C - see FT-757GX area) you can use an external micro to control a huge range of functions on the '980: mode, IF passband, frequency selection and storage functions included.

All mode computer
aided HF
Transceiver

FT-980 HF TRANSCEIVER

Specifications:

Frequency receive: 150kHz - 30MHz
Frequency transmit: 160, 80, 40, 30, 20, 17, 15, 12, 10 mtrs.

Modes: LSB, USB, CW, AM, FSK, FM

Power output: SSB CW 100W PEP: AM 25W: FM, FSK 50W

Carrier suppression: Better than -40dB

Unwanted sideband suppression: Better than -50dB

Spurious radiation: Better than -40dB

Harmonic radiation: Better than -50dB

Audio response: 300Hz to 2700Hz

FSK shift frequency: 170Hz (other shifts available)

Output impedance: 50 ohm

Audio output power: 3 watts

Receiver sensitivity: SSB better than .3uV CW better than .2uV FM better than .6uV

* Selectivity: SSB, CW, FSK 2.4kHz (-6dB) 4kHz (-60dB) CW(N) 300Hz (-6dB) 900Hz (-60dB); CW(M) FSK(N) 600Hz (-6dB) 1.3kHz (-60dB); AM 6kHz (-6dB) 11kHz (-60dB); FM 12kHz (-6dB) 24kHz (-60dB).

Power requirements: 100-120V, 200-240V 50-60Hz.

* CW(N) & CW(M) with optional filters installed

SAME AS 1984 PRICE:
DESPITE 15% DEVALUATION!

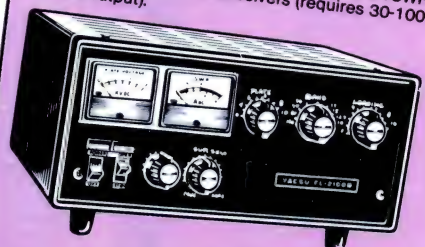
\$1995



FL-2100Z 1.2kW LINEAR

If you want a really clean signal at maximum legal power, the FL-2100Z gets it for you! And with the 2100Z's huge 1.2kW rating, at 400W PEP it's just coasting - resulting in years longer life for the output bottles.

Because it's linear, it suits all mode, and it's made for all bands from 160 to 10. Has dual cooling fans, with twin 572B's running AB2 grounded grid. Very large meters show plate voltage and current plus VSWR. Suits virtually all HF transceivers (requires 30-100W for full output).



\$799

Specifications:

Drive: 30-100 Watts

Input: 1200W PEP on SSB, 1000W on CW at 50% duty cycle, 400W on AM/FM/FSK.

Input impedance: 50 ohms unbalanced

Output impedance: Normally 50-75 ohms

unbalanced with not more than 2:1 SWR.

Distortion products: -31dB or better at 1kW.

Noise level: 40dB below single tone carrier

Power requirements: 110-240 volts, 2.1kW

Cat D-2548



FOR BASE STATION USE

FP700 General purpose transceiver supply - ideal for all '12V' transceivers. Regulated 13.5V at 20 amps plus external speaker. Cat D-2916

\$245



FC-700 ANTENNA TUNER

Get maximum power from your transceiver - despite your 'not so perfect' antenna! Includes large power/SWR meter, built in dummy load and covers all WARC HF bands. Less than 0.5dB insertion loss. Cat D-2917

\$199



FTV700 TRANSVERTER

With most of today's rigs having FM or FM options, transverting makes good sense! It's easy and cheap to get onto 6, 2 or 70 in any mode - and repeater splits are built in! Simply install the band module you require. Cat D-2876

\$199⁵⁰

PLUG IN MODULES

2m - Cat D-2877	\$179.50
6m - Cat D-2878	\$149.50
70cm - Cat D-2879	\$299.50



NOISE CANCELLING MIC

Hand held model where high QRM is a problem. Fitted with 8 pin plug, eliminates or reduces noise by out-of-phase inserts. Impedance 500 ohms. Cat C-1115

\$35⁵⁰



DESK MIC

Superbly elegant desk mic to really set off your station. Locking PTT, up-down scanning buttons plus removable base. Impedance 500 ohms. Cat C-1114

\$109



HAND HELD SCAN MIC

Suits all Yaesu transceivers with scanning function. 8 pin plug, very easy to hold for long periods. Ideal mobile mic. Impedance 500 ohms. Cat C-1116

\$37⁵⁰

The above microphones all suit Yaesu transceivers shown on these pages, plus older types with 9 pin plug such as FT-ONE, FT-707, FT-107, FT480 etc.

YAESU 4 PIN PLUG MICS YE7A HAND HELD

The favourite of many Yaesu owners. 500 ohms impedance. Cat C-1117

ONLY \$18⁹⁵



YD148 DESK MIC

Smart styling, great performance. Dual impedance to suit many rigs. (500 ohms & 50k). Cat C-1118

ONLY \$55⁰⁰

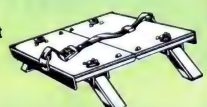


Above microphones suit 101 series, 901, 902, 7B, 301, etc.

MMB-1 BRACKET

Designed especially for the larger type of transceiver in mobile use - saves it slopping about all over the car! Unique design allows for virtually any size and mounting method. Why take the risk with your valuable HF transceiver. Get yourself a Yaesu mounting bracket. Cat D-2944

ONLY \$19⁵⁰



GaAsFET Preamps for two and seventy

We don't have to tell you about GaAsFETs - the wonder semi of the eighties! Originally designed for SHF band communications, the price has now come down so far to be a proposition for VHF & UHF. They offer far better performance than MosFETs - higher gain, lower noise and small size. You can choose either PIN diode switching or relay switching (data sheet supplied shows both). Quality Japanese made by Corona, includes mounting facilities.

Specifications:

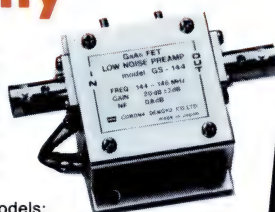
Gain: 20dB
Noise Index: 0.8dB
Intercept point: 15dBm
Supply: 8-15V
Connectors: BNC
VSWR: less than 1.5:1
Size: 20 x 40 x 55mm
Weight: 90g

Available in two models:

2 metre (GS-144) bandwidth 144-148MHz, Cat D-2956
70 cm (GS-430) bandwidth 430-440MHz, Cat D-2955

\$89

\$99



2M Linear Amplifier

Don't pay \$120 or more! This amp does a better job and will cost you less. This is an allmode, high efficiency linear amplifier for 2 metres. 30 watts output with only 3 watts in. 13.8 volt DC supply makes it perfect for mobile use. Dual time constant for SSB or FM operation. Reverse polarity protection too. Works great with our FT290R and FT208R or any 2M transceiver with up to 3 watts out. The best value in Australia! Cat D-2546



\$95

Yaesu SP55 Mini Extension Speaker

Elegantly styled speaker from Yaesu intended especially for use as an extension communications speaker for transceivers, scanners, etc in mobile use.

Measuring just 110 x 65 x 50mm (75mm high with mounting bracket supplied) and rated at 5 watts maximum, this 8 ohm unit comes complete with 1-1/2m cable fitted with 3.5mm plug. And because it comes from Yaesu, you know it's top quality. Cat D-2913



\$33⁵⁰

COMMUNICATION ACCESSORIES

Mic/Earphone Set

Popular 'aircraft' style single headphones unit allows simultaneous headset and local environment communication. Use with any transceiver. Long lead, 'push to talk' switch box & speaker plug supplied (but not microphone plug). Impedance: Headphone 8 ohm, mic 600 ohm.

Cat C-1120

\$45⁹⁵



Universal Dynamic Mic

Designed especially for AM & SSB transceivers. This economical mic is supplied with a 5-wire (4 lead plus shield) 2 metre lead that can be adapted to any transceiver - even ones with electronic switching! Has a nominal 600 ohms impedance, can be re-wired with internal transformer for 50k. Supplied with a standard 4 pin socket. Cat C-1102

\$15⁹⁵

Noise Cancelling Mic

Ideal for the amateur or CB'er. Noise cancelling is achieved by use of twin out-of-phase inserts. Fitted with a high quality PTT switch and coiled lead, impedance is 250 - 600 ohms with a frequency response of 300-5000Hz.

Cat C-1105

\$22⁵⁰



Noise Cancelling Power Mic

The cleanest signal yet. Get both audio amplification AND noise reduction for under \$40! Noise enters front and rear of the mic - cancelling each other out. Comes wired to a standard 4 pin socket. Needs 9V battery (not supplied) Cat C-1108

\$37⁵⁰

Mobile Mic Mounting Clips

MAGNETIC: Cure a dangerous dangling microphone with this clip. It attaches to the rear of most hand-held microphones. A strong magnet holds the microphone securely in place to any ferrous surface. Cat C-1260

\$1⁵⁰

SCREW-IN: A simpler type clip, can be screwed to any convenient location - the mic is held securely by a spring in the clip. Complete with mounting screws. Cat C-1262



95¢

FT-77 Mobile Mounting Brackets



MMB-16

We've had hundreds of requests for a mobile mount for the FT-77 and FT-77s.

Here it is: the genuine Yaesu mount made especially for the '77.

Cat D-2909

\$32⁵⁰

VHF/UHF All Mode Tribander FT726R

Now that so many satellites are going up, we're constantly asked for a true satellite transceiver. Here it is: and what a transceiver!

You choose the plug-in modules for the bands you want to use - two additional bands can be installed along with the two metre module supplied.

Plus a satellite IF unit can be installed giving a full duplex crossbanding with independent tuning, mode selection and metering for the band in use! Just add a couple of good antennas and you have the finest amateur satellite earth station available! Cat D-2950

- 10W output on each band
- Repeater splits for all bands easily programmed into memory
- Dual synthesised VFO's tuning 20Hz/step
- Speech processor for SSB
- 240V AC operated (12V DC with optional power cable).

COMPLETE WITH 2M MODULE

\$1499

And the add-on modules:

- All modes on all three VHF/UHF bands - 6m 2m and 70cm (with all modules installed.)
- Full duplex crossbanding with satellite unit installed

DC Power Cable:

Run your FT726 from 12V - great for contests, field days, or just getting away from the QRM! Cat D-2954

\$14⁹⁵

70cm Module:

GaAs FET receiver preamp, operates over full 430 - 440MHz band with 0.15uV sensitivity (SSB, 12dB SINAD). Cat D-2952

\$475⁰⁰

6m Module:

Full 50 - 53.9998MHz coverage with 0.15uV receiver sensitivity (SSB, 10dB S + N/N) Cat D-2951

\$375⁰⁰

Satellite Module:

Full duplex crossbanding is so easy - and this module does it all for you! Cat D-2953

\$195⁰⁰



AMATEUR ANTENNAS & ACC



250kg H/DUTY ROTATOR

With a vertical load of up to 250kg and a wind load of 0.4 square metres, our new high load rotator is ideal for VHF and UHF beams, many HF beams and virtually all TV antennas.

And best of all, unlike previous rotators, it requires just three conductors between the control unit and rotator - save \$\$\$ on long cable runs. Now there's no excuse not to put up a rotator; get the most from your beam without having to go outside and 'swing it' by hand!

Supplied complete with mast clamps and control unit, ready to mount on a flat tower plate. (Vertical mast mounting see below). Fully approved by the electricity authority: don't take chances with non-approved units.

SPECIFICATIONS	Rotation :	Full 360 degrees plus 15 degrees overrun
	Rotation Time :	60 seconds for 360 degrees
	Rotation Torque :	450kg/cm (min).
	Stationary Braking Torque :	2500kg/cm (min).
	Wind Load :	0.4 sq. metres
	Vertical Load :	250kg (max).
	Mast Size :	38 to 50mm diameter
	Weight (drive unit) :	4kg

SPARE MAST CLAMPS: In case you want to mount the rotator on a vertical mast (eg a tower extension) use a second set of mast clamps (as illustrated on the mini rotator at right). Cat D-5001 **\$21.95**

Cat D-5005

\$199

50kg MINI ROTATOR

For lightweight UHF/2m beams, TV & FM antennas, etc

Why spend \$\$\$ more on a heavy-weight rotator when all you're turning is a small beam? Our fully automatic rotator is no slouch! With 50kg vertical loading plus wind load of 0.25 sq metres, it's ready for most TV, FM and VHF/UHF antennas. And the great news is it requires only a lightweight 3 core cable (very economical) and is fully approved by the electricity authority.

Specifications:
 • Full 360 degree rotation (plus 15 degrees!) with mechanical stop
 • Second rotation time • 70 minimum
 • 1000kg/cm rotation • 200kg/cm minimum torque
 • braking torque • minimum stationary diameter • Mast size 22-40mm square metre wind.
 • Loading 50kg vertical, 0.25

Cat D-5003

\$110



MOBILE ANTENNAS AND BASES

2 METRE 5/8 WHIP

Real value in a 2 metre whip: this one is the ideal replacement antenna for all 2 metre users. 5/8 wavelength long, very flexible (so you won't break it off on low flying aircraft) with standard 5/16" x 26tpi female socket on base. Use with either of the bases at right. Long life black heatshrink covering. 1.34 metres
 Cat D-4205

\$17⁵⁰

UNIVERSAL UHF/VHF KIT

Coaxial Neoprene base (coax feed) plus stainless steel whip ready to cut to desired frequency. Complete with cutting chart, suits any 1/4 wave 2m or higher frequency. (Does not include coax).
 Cat D-4023

\$13⁵⁰

VHF/UHF WHIP KITS

Cut your whip to suit your band; we have two different kits available, one to suit VHF or UHF operation and one for UHF only. Both come complete with gutter gripper mount, quality antenna base to fit, 2 metres RG58C/U UHF quality co-ax cable, a PL-259 UHF connector and a whip antenna. Both have cutting charts to allow you to cut the whip to the exact length for the frequency of operation.

UHF ANTENNA KIT

Designed to suit our K-6300 UHF amateur transceiver kit, but obviously ideal for all types of UHF transceivers (CB included!). 150mm stainless steel whip included plus special UHF co-axial base.
 Cat D-4014

\$28⁵⁰

VHF/UHF KIT

Similar to above, but has 520mm whip which can be cut anywhere between about 120MHz and light! Base included is standard (soldered) type - very easy!
 Cat D-4024

\$28⁵⁰

DELUXE GUTTER GRIPPER BASE

At last! A gutter gripper that will grip: anything! If you have a difficult mounting problem, try this one. It has a non-distorting grip, with two direction adjustment to take into account just about any angle. 14mm mounting hole suits most antenna bases. This can even be used on the vertical section of your car's gutter!
 Cat D-5100

\$13⁵⁰

UNIVERSAL MAGNA BASE

Ideal for company cars, etc, where drilling holes in the roof is a definite no-no! Extra strong magnet grips any ferrous surface and stays stuck even at high speeds (tested at over 130km/h!). Gasket prevents scratching. Standard 5/16" x 26tpi male thread for use with amateur or CB antennas (for adaptors see CB pages). Coax and PL259 plug included.
 Cat D-4514

\$32⁵⁰

WEATHERPROOF BASE

for HF/CB/VHF use
 Universal base for mobile use (we've even seen them used on aluminium roofs!). Neoprene & nylon washer ensure weatherproof mount. This versatile base can be used through roof or on an antenna bracket (eg. roof rack). Requires 14mm hole. Use with W-1372 lead set. Fitted with standard 5/16" x 26tpi.
 Cat D-4056

\$5⁵⁰

LAMP LOAD

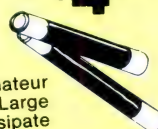
Built into PL-259 plug - ideal for 27MHz testing. Lights up on carrier, also shows modulation. Rated at 5W.
 Cat D-7024



\$4⁵⁰

100W LOAD

High power for amateur transceivers, etc. Large surface area to dissipate huge amounts of heat, 100W continuous rated.
 Cat D-7010



\$44⁵⁰

DC - UHF 15W LOAD

15W load with radial fins, fitted to PL-259 plug. Flat response from DC to 450MHz (usable over 500!); ideal for 70cm & UHF CB bands.
 Cat D-7025



\$22⁹⁵

300W Load

50 Ohm ceramic resistor with high overload tolerance: handles 300W for 30 seconds, 75W for 8 minutes. Fitted with SO-239 connector. Offers a VSWR of less than 1.1:1 from DC to 30MHz, and 1.5:1 maximum to 150MHz. 45 x 55 x 155mm. Cat D-7030



\$54⁵⁰

2 POS.

COAXIAL SWITCH

At last! A really high quality coaxial switch suitable for all HF, VHF & UHF (900MHz) uses. Made by Welz in Japan, it offers the serious amateur better isolation, lower insertion loss and better performance than most other switches on the market.



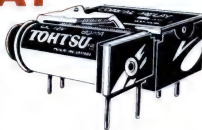
SPECIFICATIONS
 Impedance : 50 ohms
 Frequency : DC-900MHz
 Insertion Loss : Less than 0.1dB
 Isolation : Better than 50dB
 SWR : Better than 1.15
 Power : 1kW (Cont)
 Rating : Maximum

\$44⁵⁰

Cat D-5208

PCB Mounting CO-AX RELAY

Mini pcb mounting relay with fully enclosed contacts for coax cable. Coil rated at 12 volts, 80mA. Handles up to 1000MHz - so its ideal for all HF, VHF and UHF switching applications. Size overall 35mm square x 15mm high. Make up your own antenna switching unit and save \$\$\$ on coax cable runs! Cat S-7402



SPDT CONTACTS

\$27⁵⁰

**LOOKING FOR
SOMETHING
TO HOLD YOUR
ANTENNA UP?
SEE OUR TV
SECTION PAGE 62**

ANTENNA BALUN KIT

Contains ferrite ring, enamelled copper wire and winding details for 1:1, to 1:9 ratio. Input power 2kWPEP and frequency range 3 - 30MHz. Cat D-5350

\$14⁵⁰



R.F. TOROID KIT

Contains two iron powder cores, enamelled copper wire, application notes, inductance chart and an LCF nomograph. Toroids are used to advantage in Tank circuits, Pi networks, RF transformers, T-Networks, floating tanks, band pass filters, baluns, multiband tuners, antenna loading coils, RF traps, IF networks and oscillator tanks. The two cores provide a useful high Q spectral range of 1MHz through 60MHz. Cat L-1410

10 up \$4.00

\$4⁵⁰

V5JR 5 BAND VERTICAL

If you're typical of most amateurs, you live in the suburbs where space is at a premium. You need an effective antenna, but there are objections to putting up a beam (the wife, the council, the neighbours etc.) You need our V5JR vertical. Virtually unnoticeable in your backyard, you'll be able to pursue your hobby without worry!

The V5JR uses pre-tuned trap coil assemblies enabling the one antenna and feed line to automatically operate on any one of the chosen bands between 80 and 10 metres. The antenna base mounts on any pipe of roughly 25-31mm in diameter. Full setting up instructions are provided, including details of radials/guys to optimise performance if the antenna is to be operated in an elevated position.

- Covers 80 - 40 - 20 - 15 - 10 metres
- 6.25 metres high. Weighs 2.3kg
- Rated at 300W PEP
- Fits up to 32mm dia support pipe

\$145

Cat D-4305

TRI BAND BEAM

Mini-Multi's MSC33 offers top performance on 10, 15 & 20 metres and its compact design makes it ideal where space is a limiting

factor. Durable and lightweight for tower installations. Featuring separate and matched HI-Q traps for each band, it feeds with 50 ohm coax and delivers maximum front to back ratio. The MSC33 is pre-tuned for a SWR of less than 1.5:1 at resonance.

- Maximum element length: 6.3m
- Boom length: 3.8m
- Weight: 8kg
- Rated at: 600 watts PEP
- Average gain: 8dB

\$399

Cat D-4303

Use D-5310 Balun for top performance!

MORSE KEYS & TAPES

HI MOUND KEY

Double ball pivot rollers and full adjustment for superb quality code. Contacts for break-in keying included. Cat D-7104



\$39⁹⁵

Economy Key

Ideal for practice, just the shot for a youngster wanting to learn Morse. Great with our Morse Code Oscillator project in the 'Fun Way' series! Cat D-7105



\$3⁵⁰

Morse Tapes

Teach yourself Morse! You'll know words within a couple of minutes. Two tapes take you up to 13 WPM. Cat D-7106



\$9⁵⁰

Novice Course

For the person wishing to enter the hobby of Amateur Radio this is an easy to follow first instruction. Complete with Morse tape which gives you full novice standard. Cat D-7110



\$10⁹⁵

YAESU HF/UHF MOBILE

The fabulous Yaesu antenna system for HF and VHF. You buy the gutter mount base and 2 metre stub, and you're on the air on 2m immediately. As you want the HF bands, simply buy that band resonator/antenna whip and screw it into the 2m stub. You only have to buy the whips for the bands you want. Go mobile with Yaesu.



RSM 2 GUTTER MOUNT Cat D-4100	\$29.50
RSE 2A STUB (2M Antenna) Cat D-4102	\$14.50
RSL 145 6M/2M ANTENNA Cat D-4104	\$35.50
RSL 3.5 80M RESONATOR Cat D-4110	\$29.50
RSL 7A 40M RESONATOR Cat D-4112	\$29.50
RSL 14 20M RESONATOR Cat D-4114	\$29.50
RSL 21 15M RESONATOR Cat D-4116	\$29.50
RSL 28 10M RESONATOR Cat D-4118	\$29.50

RAK BL-50A BALUN

T shape design for use as a centre support for dipoles or yagi antennas. Input 52 ohms unbalanced. Output 52 ohms balanced. RF input power 1kW with an insertion loss of less than 1dB. Frequency range entire HF band (3-30MHz). Cat D-5310



\$44⁵⁰

SHINWA FILTER

Stubborn case of TVI and BCI? Try the 'Big Gun'. Shinwa filter has helped thousands of customers. Handles up to 500 watts. Cut off is around 30MHz, insertion loss is less than 1dB and maximum attenuation is around 50dB! Ideal for amateurs and CB'ers. Cat D-7080



\$34⁵⁰

EGG INSULATORS

Small insulator, unbreakable nylon construction. Ideal for smaller antenna installations. Cat D-5300



95¢

Medium size - made of the same material, but will handle much larger installations: e.g. for extra long arrays or guy wires. Cat D-5302

\$1⁶⁵

10 up **\$1.55**

TRANSMITTING VALVES

Type No	Cat No	Price Ea	Price 10 up
6146B	D-7202	\$27.50	\$24.75
6JS6C	D-7204	\$20.00	\$18.00

572B valves as used in FL-2100Z linear available from our service department.

AMATEUR BOOKS AMATEUR

AMATEUR RADIO CALLBOOKS

Australian Amateur

Every serious amateur needs to keep a Completely up-to-date call book. Compiled by the WIA from official DOC lists, together with registered SWL's and Papua/New Guinea amateurs. And this year there's a huge amateur data section that you will find invaluable. **WARNING:** strictly limited stock. Cat B-2322

\$6.45

Foreign Radio Callbook 1985

Contains over 400,000 licensed radio amateurs in countries all over the world, giving call letters, name and addresses, (does not include the U.S. - see below). Cat B-2285

\$39.50

Satellite Books

The Satellite Experimenter's Handbook

by Martin R. Davidoff
All you need to know to communicate with the heavens. This one book tells all that's necessary to pick up signals from orbiting satellites. Whether your interests be in Amateur Radio, weather or TV - broadcast spacecraft you'll find what you need to know! Give it a go!
Cat B-2235

\$22.95

Complete Guide to Satellite TV

by Martin Clifford
- 250 pages If you've ever tried to find information on TVRO reception - details on siting and installing TVRO base stations or specifications on satellite orbit-uplinks and downlinks - you've probably ended-up down yourself. Well finally someone has come up with a single publication which covers everything on Satellite TV. Your shelf would be lonely without it.
Cat B-1841

\$16.50

Home Satellite TV

Home Satellite Television by Rick Cook & Frank Vaughan - 326 pages. Can YOU set up a personal Earth station? Is it a practical alternative what about costs? The answers to these and many other questions you may have about Home Satellite TV are contained in this new state-of-the-art sourcebook. If you're thinking about your own station or just curious this one has the answers.
Cat B-1840

\$17.50

The of World Satellite TV

Long and Keating - 224 pages
What an amazing book! Covers just about everything you'd ever need to know about satellite TV: the satellites, the equipment, the programming - even the installation and legal questions! And the appendices and lists contain almost as much info as the book itself. We've only just found this book - just in time for satellite TV! Cat B-1842

\$22.95

US Radio Amateur Callbook 1985

This year's up-dated version is even bigger and better. Over 400,000 licensed radio amateurs in the United States, its possessions and territories. Contains call letters, class name and address for all.

\$39.50

Radio Amateur Prefix Map

A fantastic map that shows the prefix on each country plus capitals and major cities. Also DX zones. Ideal for the shack wall.
Cat B-2264

\$4.50

World Atlas

Contains 20 pages - 4 beautiful colours - of all six continents plus the polar projection and the West Indies - Caribbean area. Great for DXers.
Cat B-2268

\$6.50

Yaesu Logbook

The finishing touch to your Yaesu station (and will really lift the level of your Ke****d or I***m station!!!) Provision for all QSO details including QSL data.
Cat B-2029

\$3.95



Weekend Projects for the Radio Amateur

ARRL - Vol. 1 61 pages
6 chapters on receiving, transmitting, test equipment accessories, power supply and miscellaneous give the serious amateur constructor lots to do of a weekend.
Cat B-2213

\$9.50

Antenna Anthology

ARRL - 151 pages
The best of recent QST HF antenna articles and theory presentations collated into one useful and very handy reference book. Make sure you have the best antenna for where you live and that your rig is correctly tuned to the antenna.
Cat B-2205

\$10.50

Amateur Radio and Electronics Study Guide

Ridpath - 210 pages

A clear and concise study manual for the amateur syllabus. Designed to make learning easier in a short uncluttered text with large clear illustrations in Students-Own-Note form. This invaluable publication has been tailored to fill the gap between high level amateur radio handbooks and over simplified beginners manuals.
Cat B-2319

\$12.95

500 Questions For A.O.C.P. Candidates

NSW W.I.A. Y.R.S. Education Service.
Written to aid candidates preparing for the new multiple choice format A.O.C.P. exams. Contains 500 questions with answers and a proposed syllabus for study for the A.O.C.P.
Cat B-2318

\$3.85

Manual of Q & A For The Novice Licence

Keith Howard VK2AKX
For the would-be novice this book asks a question, then gives the answer in simple but explicit terms, an excellent means of learning. Covers everything from the ohm to regulations.
Cat B-2315

\$6.45

The Ham Exam Cram Book

A study and revision guide for the A.O.C.P. This book is not intended to replace recommended text books but it will certainly sharpen your knowledge and prepare you for the theory exam without wasted effort. Contains concisely explained and clearly illustrated examples as well as many multiple choice questions with answers explained.
Cat B-2314

\$5.45

1000 Questions for Novice. Candidates

Published by the W.I.A. 4th Edition. For the aspiring amateur this book is essential. Asks the questions most likely to arise in the exams. Covers all aspects from electrical laws to regulations and test equipment, etc.
Cat B-2316

\$6.45

American Radio Relay League Publications

Solid State Design for the Radio Amateur

ARRL - 256 pages
For the amateur interested in extending his theoretical understanding and gaining experience with communication equipment. There are a number of practical projects included. They range from simple QRP transmitters to receivers which approach optimum performance. 'A book of the highest quality' EA
Cat B-2211

\$21.50

Understanding Amateur Radio

ARRL - 218 large format pages
For the newcomer to amateur radio this is THE book with the accent on understanding. It establishes a good technical background for all phases of amateur radio. Gives the basic concepts on circuits and equipment. Perfect for novices & CB'ers.
Cat B-2232

\$12.95

ARRL Antenna Book

The latest revision of this extremely popular ARRL handbook. Information, data & technical tips on all types of antennas, plus many antenna projects to build. A must for every shack.
Cat B-2207

\$21.50

ARRL Radio Handbook '85

It just keeps getting better and better every year . . .

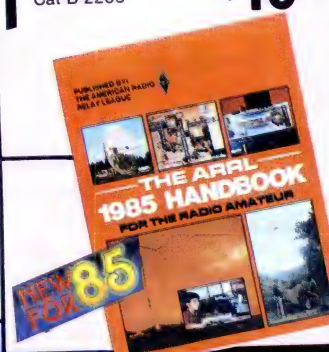
If your 'Bible' is more than a year or so old, it's out of date! Now available - the brand new, all singing, all dancing 1985 version of the radio amateur's most valuable reference book. Over 40mm thick!! it covers everything in amateur radio from history to the future. Includes a great new section on Packet Radio, plus all the latest on amateur satellites, etc etc.

More amateurs have their 'ticket' thanks to the ARRL Handbook than any other reference. Get it in your library and you could join them!

- All the basics • All the theory • All the advanced info
- All together in one handy reference.

\$29.50

Cat B-2218



BOOKS AMATEUR BOOKS

How To Tune The Secret Shortwave Spectrum

Ever wanted to know the frequency that the Soviets use on the Soyuz missions (so you can listen in?) Well, this book has that information and a lot more. It gives you all those frequencies that are not usually published e.g. Military, Government, Espionage, Pirate etc. Great reading. Cat B-1649

\$11.50

GUIDE TO RTTY

Intercepting and demodulating RTTY signals is an extension to the SWL'ing hobby and this fascinating book provides the only realistic source of detailed station information. Contains a comprehensive listing of commercial, aeronautical, maritime, press, embassy, UN and military RTTY activity. Cat B-2070

\$17.50



\$15.95



WORLD RADIO TV HANDBOOK

A brand new edition for 1985. The most thorough and complete listing of international radio and television stations. Used as a reference throughout the world, contains information on frequencies, addresses, call signs, ID's and lots, lots more. Also includes special interest features written by specialists in their own fields. Cat B-2085

\$32.50

THE TRUTH ABOUT CB ANTENNAS

Orr and Cowan — 240 pages
Now, for the first time, a handbook exposes the false antenna claims and enables CBers to determine true power gain of the 10 most popular antennas. With this book you can buy or build, install and adjust for the strongest signals. Cat B-2327

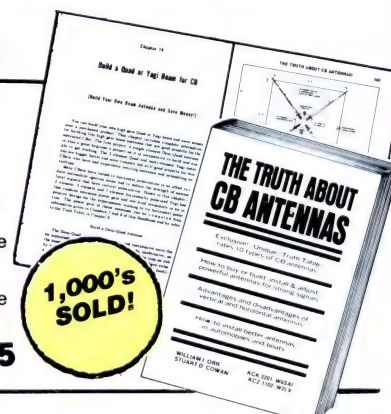
\$13.75

CB PLL DATA BOOK

A mine of information for the avid Cb'er. Contains details on the phaselocked loops used in just about every CB ever made. So what? It also tells you how to modify the PLL circuitry to give more channels, to push it, to repair it, to do just about anything except talk. (They're working on that one!) And if you repair CB's, this is indispensable for the technical data it gives — data you won't find anywhere else. Cat B-2326

\$14.50

1,000's SOLD!



Test Gear For Radio Hams

H.L. Gibson, 2nd Edition — 151 Pages
Explains the principles of measurement techniques, and gives constructional details of up-to-date equipment of interest not only to the radio amateur but also to the electronics enthusiast. Cat B-2041

VHF-UHF Manual

Evans and Jessop
This huge hard covered manual deals with the techniques and equipment applicable to frequencies above 30MHz with particular emphasis on microwaves. Cat B-2054

Radio Society of Great Britain Publications

A Guide To Amateur Radio

Pat Hawker G3VA — 18th Edition
This RSGB publication covers all aspects of amateur radio from getting started through communications receivers to workshop practice, operating a station and exams — 140 pages of very useful information. Cat B-2043

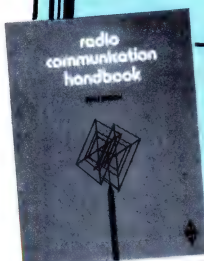
\$9.95



Radio Communications Handbook Combined

Both Vol 1 & Vol 2 combined: highly recommended for studying for AOCIP. Covers RTTY, propagation, aerials, mobile and portable equipment, noise, power supplies, interference, measurements, satellite communications, image communication, etc. A must for the serious amateur. Cat B-2033

\$29.95



Antenna Books

Wire Antennas for Radio Amateurs

192 pages
How to build efficient horizontal, vertical, multitap, trap and beam antennas from 2-160 metres, 'Invisible' antennas for difficult QTH's, 2 and 6M quickie beams, tuners, baluns, etc. Cat B-2302

\$12.50

All About Cubical Quad Antennas

112 pages
The world famous classic on Quads! Gives new dimensions, revised gain data, Quad V Yagi, Mini Quad and Monster Quad construction. Correct dimensions given for 6 to 80 metres. Cat B-2304

\$10.50

Beam Antenna Handbook

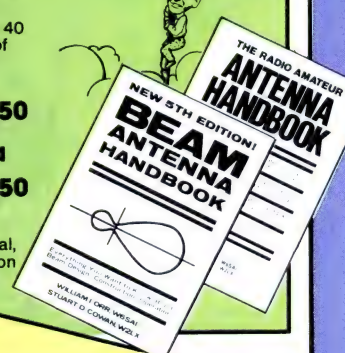
Correct beam dimensions 6 to 40 metres. Are 40 metre beams worth the effort? Construction of Triband and compact beams, the truth about height/matching systems, baluns and test equipment. Cat B-2306

\$14.50

The Radio Amateur Antenna Handbook

Bill Orr & Stu Cowan
Contains everything you need to know about antennas. Beams (Yagi, Quad, and LPY), vertical, horizontal and 'sloper' antennas plus information on all aspects of use, losses, etc. Cat B-2308

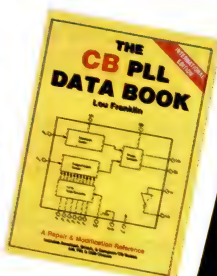
\$14.50



VHF HANDBOOK

This book is the updated second edition of the famous VHF Handbook. It deals with major VHF subjects in clear language; FM equipment, repeaters, VHF antennas, DX Propagation, satellites, EME and construction, etc. Cat B-2300

\$18.50



DATA BOOKS DATA BOOKS DATA BOOKS

Australian Semiconductor Data & Applications Book

Dick Smith Electronics - 131 pages
Whether you're a professional electronics engineer, or just a weekend professional - this book should solve those information needs. For the type of components used every day, keep this on the workbench or desk and forget about searching through the library. It can save you hours in lost time and frustration!
Cat B-4200

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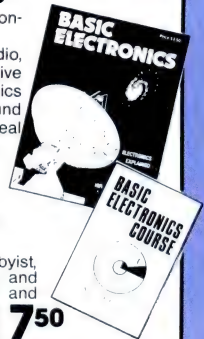
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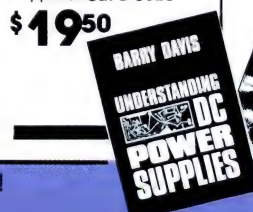
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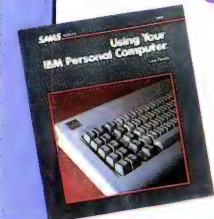


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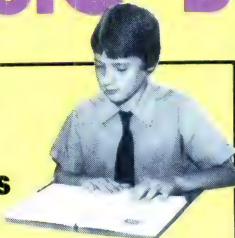
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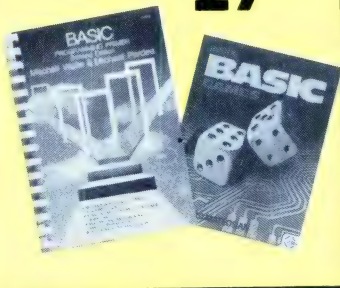
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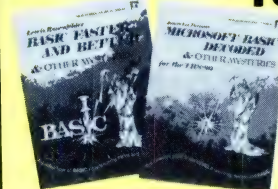
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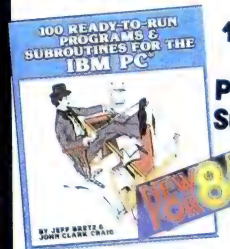


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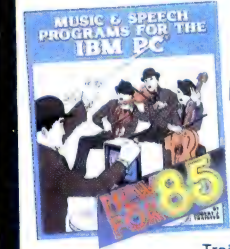
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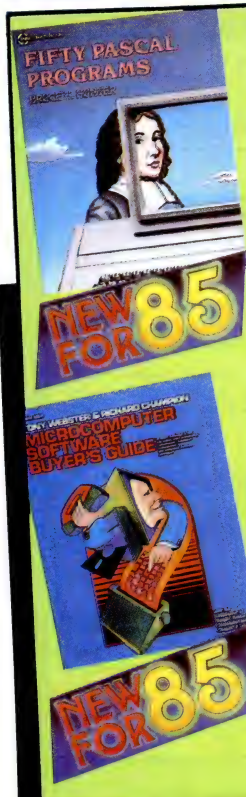
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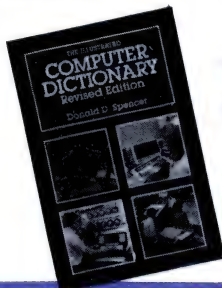
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For enquiries regarding re-selling or quantity prices, please call **DS Distributors, Cnr Lane Cove & Waterloo Rds, Nth Ryde NSW 2113.**

SCHOOLS, COLLEGES ETC

We supply a very large number of schools with components, etc for their electronics courses. Obviously, the bulk discounts apply for schools purchasing in quantity. A 30 day account is available for schools - please apply direct to the General Manager on your school letterhead.

SALES TAX

All prices shown in this catalogue include sales tax, where applicable. Goods can only be supplied, less tax, if:

1. A sales tax number or exemption certificate is supplied on an official order, or
2. A properly completed and signed student's exemption form is supplied (specifically for calculators etc.), or
3. The goods are to be directly exported by us, or
4. Travel documents, etc. are supplied by bona-fide overseas travellers. (See 'Overseas Travellers').

In all cases for sales tax exemption, the minimum value of each item must be at least \$10.00.

SUBSTITUTION

When a certain product is no longer available, we will substitute for an equal or better quality product on the understanding that a substitute is available. If our purchasing power makes this substitute cheaper, then we will pass on the saving to the customer. If, however, we can improve on the product, the price could either increase or remain the same as the original product. To reiterate, all prices and specifications are subject to change without notice.

TERMS

We can offer credit terms through Custom Credit to customers who personally visit our stores. These terms are offered on condition that the customer is approved by the finance company (*TAP: to approved purchasers). Terms are not available through DSXpress.

DSXpress Toll-Free Phone Order

To make ordering even easier we have installed a special 'Order-by-Credit Card' phone line. To place an order, ring us on

(008)226610

For the price of a local call, anywhere in Australia (8.30 - 5.00pm Monday to Friday) and quote your Credit Card No. & street address. We'll have your order on its way in less than 24 hours. Mail order enquiries should be directed to the normal phone number.

(02) 888 2105

NEW ZEALAND BANKCARD

We are happy to accept New Zealand Bankcard as payment for international Mail Orders. Simply fill in the Bankcard details on the Mail Order form.

NEW ZEALAND CUSTOMERS

Despite opening a Dick Smith store in Auckland with its own Mail Order Centre, we still have a large number of New Zealand Mail Order Customers buying from our Australian Mail Order Centre because of the increased range available. When buying from overseas, please remember to take into account the difference in exchange rates between your currency and the Australian Dollar.

OPEN CHEQUES

If you are not sure of the total amount of your mail order and are paying by cheque, simply cross the cheque, having made it out to Dick Smith Electronics, and leave the amount payable blank. We will then fill in the extra cost of the goods and delivery charges. This eliminates charging for small balances or issuing credit vouchers. Many of our customers have been using this system for years and find it very satisfactory.

RAIN CHECK POLICY

If advertised goods are sold out during the currency of the advertisement or if goods are otherwise unavailable for unforeseen reasons, our policy is to issue a 'Rain Check' to enable you to buy the goods at a later date for the advertised price. This does not apply to special scoop purchases, limited stock offers and the like which will normally be noted as such and say 'No Rain Checks'.

COMPUTER HOTLINE

Because of the fantastic response to home computers and their peripherals, we have instigated a **COMPUTER HOTLINE**. This service is extended to customers who have purchased, or are thinking of purchasing, any Dick Smith computer or hardware and software peripherals. We welcome your enquiries as we feel that the only way to a better understanding of the computers we sell is through your questions. Please give us a call

1.00pm to 5.00pm, Monday to Friday on (02) 888 2002



OVERSEAS TRAVELLERS

As a service to overseas travellers visiting Australia, our stores can supply goods free of sales tax providing:

1. Airline tickets, passport etc. are produced at the time of purchase.
2. Certificate 'C' is properly filled out and handed to the store manager.

NOTE: Australians travelling overseas are not eligible for this concession under Australian Government Laws and Regulations.

SPECIAL PURCHASES

We stock the goods shown in this catalogue and our regular advertisements in Electronics Today, Electronics Australia and other magazines, the daily press and on TV. New items are continually being added to the range to cater for as wide a range of needs as possible and a great deal of effort is put into searching for new products. For this reason, it is impossible for us to purchase special items for individual customers.

MINIMUM MAIL ORDER VALUE

The minimum order amount is \$5.00 unless otherwise implied in 'Special Offers' through advertisements.

OVERSEAS MAIL ORDERS

We are happy to sell to foreign countries. Simply address your order to 'DSXpress International Mail Orders' at the address on the Mail Order Form. Where possible, we will deduct Australian Sales Tax (note the \$10.00 minimum for sales tax exemption).

On more expensive items, the savings in Sales Tax could mean the cost of airmail postage is largely recovered. Remember, however, that you may have to pay Customs and importing charges at your end, if applicable. We cannot supply full Customs documentation, but all parcels include the required Customs dockets.

We would also remind overseas customers that our guarantees are 'ex-store'.

If, for any reason, goods are returned to us from overseas (eg for service, etc) it is absolutely essential that Customs documents are included. If they are not it can be a very costly process to obtain Customs Clearance, and this charge must be paid by customer. Failure to include Customs documents can also result in long delays.

REGISTRATION

The customer may nominate registration and insurance for his goods. Where this is not specified, the goods will be sent at the customers' - your - risk!

DAMAGED GOODS

All claims for damaged or missing goods must be filed with the carrier concerned - do not open parcel if you suspect that the goods are damaged.

QUOTATIONS

We do give written quotations if required. We must emphasise however, that prices are subject to confirmation at time of order. This is because there are many factors in our prices that are beyond our control and therefore responsibility.

PRICES ON PRODUCTS

All prices in this catalogue were checked at time of compilation, but are subject to change without notice.

The price savings shown are either off our previous price, or off our competitor's normal selling prices for equivalent goods.

STORE HOURS

All Dick Smith stores are open for trading during the normal trading hours for their particular area (either 9 - 5.30 or 8.30 - 5). Many stores are also open for late night trading; please ring the store concerned for their particular hours (nos. on page 5).

LIABILITY

As the use of our products is completely beyond our control or supervision, we cannot be held responsible for damage or destruction, consequential or otherwise, of equipment or articles in or on which our products are used, attached, or otherwise employed. Liability is limited to repair, replacement or refund (at our option) of goods purchased.

HAVE YOU ANY PROBLEMS OR COMPLAINTS?

We are particularly proud of the reputation our Company has earned with electronics enthusiasts. The last thing we want is an unhappy customer. If there is something that you don't like, or if you have any suggestions which may help us serve you better, why not let us know. I assure you that every letter will receive my personal attention.

Write to: 

**Mr. M. Wilson, Managing Director,
Dick Smith Electronics,
PO Box 321, North Ryde NSW 2113**
or call me on Sydney (02) 888 3200

DESPATCH OF ORDERS

All goods in stock are despatched promptly. Goods out of stock are 'Back Ordered' and sent later at our expense (and it's an extremely costly job) unless we advise otherwise. All back orders are despatched immediately we receive the goods from our suppliers. When we send a copy of the order back to you, the delay times will be quoted, but because this information is given to us by our suppliers we cannot guarantee their accuracy.

ENQUIRIES ON ORDERS

If you wish to enquire in any way about your order, please give **FULL DETAILS**. Give date of posting your order to us, your name, address and postcode, a list of the products ordered, any relevant mail order/cash sale invoice numbers. If the above are not given, we have no way of checking your order. Please quote Customer No. for fast efficient service.

PHONE ENQUIRIES ON ORDERS

You are welcome to enquire about your mail order by phoning in. Simply ask for 'Mail Order Enquiries'. When connected give the following information: your name, postcode and the information you require. You will then be asked to phone back in 15 minutes. You will appreciate that with over 75,000 mail order customers, it may take us a little time to locate your order. Phoning back saves time and expense, especially with STD calls. It also saves jamming our switchboard. Please quote Customer No. for fast efficient service.

CREDIT ACCOUNTS

We do not operate general credit accounts and we suggest that customers use their Credit Cards whenever possible.

DSX PRESS
DICK SMITH ELECTRONICS EXPRESS ORDER SERVICE

DICK SMITH ELECTRONICS EXPRESS ORDER SERVICE

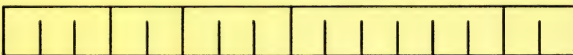
PO BOX 321 NORTH RYDE, NSW 2113. Phone Enquiries: (02) 888 3200
17 YEARS RELIABLE MAIL ORDER SERVICE

Name Customer No.: Tel. No.()

Address Postcode

Date Have you bought by YES ☐ If so please print
Mail Order before? NO ☐ previous address here

Expiry Date



Signature

[illegible]

Delivery Instructions (Please tick)

Post & Packaging

For goods sent by standard mail in Australia only.

- ☐ Standard Mail (See P&P table below)
- ☐ Airmail (Add \$4.00 to standard P&P charge)
- ☐ Registered Mail

(Add \$4.00 to standard P&P charge)

ORDER VALUE	P&P CHARGES
\$ 5.00 – \$ 9.99	\$2.00
\$10.00 – \$24.99	\$3.50
\$25.00 – \$49.99	\$4.50
\$50.00 – \$99.99	\$6.50
\$100.00 or more	\$8.00

DSX_{PRESS} *Freight*
DICK SMITH ELECTRONICS EXPRESS ORDER SERVICE

- ☒ AIR \$6.50 (up to 4 kilos) ☒ ROAD \$10.00 (up to 10 kilos)
- ☒ AIR \$12.00 (up to 10 kilos) ☒ OVERSEAS: super economy

Merchandise Total:

Pack & Post/Freight:

(Registration):

SUB TOTAL:

Less Credit:

TOTAL \$

IN A HURRY? XPress ORDER LINE 008 226610
Bankcard — Mastercard — Visacard Welcome.

MINIMUM ORDER \$5.00

14 DAY MONEY-BACK GUARANTEE



For any goods ordered on this form only from DSXpress, we offer you FREE freight - anywhere in Australia! That's right, we'll pick up the tab for freight charges ON THIS FORM ONLY!

Look at these benefits in shopping from home through DSXpress...

ONLY DSXpress gives you the security of 17 years experience - almost half a million customers just can't be wrong! Everybody appreciates our simple, reliable and speedy service. While others are promising, we're delivering.

ONLY DSXpress gives you the benefit of our exclusive 14 day satisfaction guarantee: if you're not absolutely delighted, return the goods in original condition and packaging for a full refund (or credit to your card). You'll owe nothing: not even an explanation.

ONLY DSXpress gives you the convenience of seven different ways to order... and four different low-cost ways to receive your goods (we subsidise the freight charges, too!) And **DSXpress** sends orders all over the world: New Zealand, Papua New Guinea, the Pacific... and even to the heart of mail orders - the USA!

ONLY DSXpress has a fully computerised automatic back-order system: our IBM System 38 computer automatically prints an invoice carefully detailing all items, credits, charges, etc. No messy hand-written scraps of paper. No credit notes to get lost: your next order automatically is credited with any previous overpayments! (If you prefer, we'll post back a cheque immediately!)

ONLY DSXpress has a fully computerised automatic back-order system: if something you order is out of stock, the computer registers a priority when the stock arrives. We send the missing items to you - automatically - and we pick up the tab.

ONLY DSXpress has over three hundred thousand dollar's worth of stock PLUS a buffer stock of nearly seven million dollars! (DSXpress is right next door to our main warehouse - under the same roof - so guess who gets the goods the quickest???)

ONLY DSXpress uses professional packing consultants to make sure your goods arrive undamaged, but with a minimum packed weight to save costs. And only DSXpress has a full-time packing quality control officer - just to make sure!

ONLY DSXpress offers exclusive 'specials' and offers not available through the rest of the company stores. There are big advantages in being a DSXpress customer: you're a member of an exclusive 'club' which receives special consideration. We know how difficult it can be to live out the back of Bourke: we want to make life as easy as possible for you!

ONLY DSXpress has the buying power of nearly five hundred stores and re-sellers in three countries, PLUS the backing of a two billion dollar per year organisation. You'll find we have items not available elsewhere, at the right price!

ORDER ANYWHERE IN AUSTRALIA
FOR THE PRICE OF A LOCAL CALL:

(008) 226610 (Orders only to this number please
Enquires to (02) 888 2105).



ORDER FORM

PO BOX 321 NORTH RYDE, NSW 2113. Phone Enquiries: (02) 888 3200
17 YEARS RELIABLE MAIL ORDER SERVICE

Name Customer No.: Tel. No.()

Address Postcode

Have you changed your address?

Date Have you bought by YES ☐ If so please print
Mail Order before? NO ☐ previous address here



PAYMENT: ☐ Cheque ☐ Money Order ☐ VISA ☐ Bankcard ☐ Mastercard

Expiry Date

[illegible]

Signature

[illegible]

Delivery Instructions (Please tick)

Post & Packaging

For goods sent by standard mail in Australia only.

- ☐ Standard Mail (See P&P table below)
- ☐ Airmail (Add \$4.00 to standard P&P charge)
- ☐ Registered Mail

(Add \$4.00 to standard P&P charge)

ORDER VALUE	P&P CHARGES
\$ 5.00 - \$ 9.99	\$2.00
\$10.00 - \$24.99	\$3.50
\$25.00 - \$49.99	\$4.50
\$50.00 - \$99.99	\$6.50
\$100.00 or more	\$8.00



DICK SMITH ELECTRONICS EXPRESS ORDER SERVICE

- | | |
|---|--|
| <input type="checkbox"/> AIR \$6.50
(up to 4 kilos) | <input type="checkbox"/> ROAD \$10.00
(up to 10 kilos) |
| <input type="checkbox"/> AIR \$12.00
(up to 10 kilos) | <input type="checkbox"/> OVERSEAS:
super economy |

Merchandise Total:

Pack & Post/Freight:

(Registration):

SUB TOTAL:

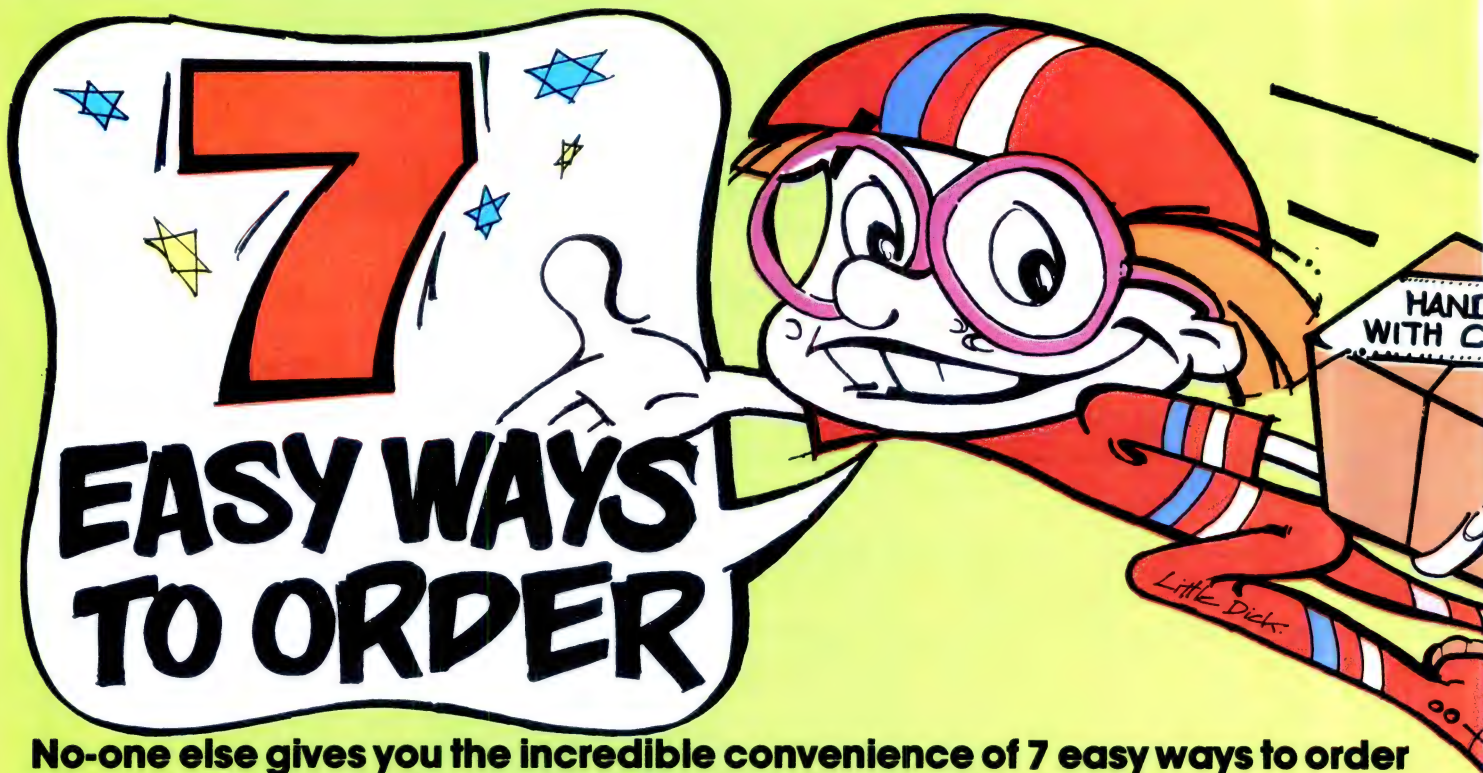
Less Credit:

TOTAL \$

IN A HURRY? XPress ORDER LINE 008 226610
Bankcard — Mastercard — Visacard Welcome.

MINIMUM ORDER \$5.00

14 DAY MONEY-BACK GUARANTEE



No-one else gives you the incredible convenience of 7 easy ways to order through DSXpress . . . Australia's leading Mail Order Service.

(1) ORDER BY PHONE: FOR THE PRICE OF A LOCAL CALL!

No matter where you are in Australia, it will cost you just a local call for a fast and convenient call to our credit card orderline!

Yes, as well as our original number (02)888 3200- we now have a special toll-free number - 008 226610 - for our intra-state and interstate customers. So no matter where you are in Australia, you can order for the cost of just one local call!

Payment may be made through your nominated credit card: Bankcard, Visa or Mastercard.

(2) ORDER BY COMPUTER: 21ST CENTURY ORDERING!

If you own a computer, you must know about the Dick Smith Electronics Remote Bulletin Board System - (02)887 2276. As well as all the features of this free service, a special section has been included to allow you to order via your computer! Yes, you can call the RBBS even at three o'clock in the morning and place your order, charge it to your credit card . . . and have it on its way later the same day! Full details from the DSE RBBS (02) 887 2276.

(3) ORDER BY FAX: QUICK, CONVENIENT AND CERTAIN

Especially for those with access to facsimile machines (and that seems to be an incredible number these days!) we've installed a fax machine, ready for your order any time - day or night. And the best part about fax is you know the order is in writing - as you wrote it: there can't be any misunderstandings! Our fax machine is group one, automatic and the number is (02)888 3631

(4) ORDER BY TELEX: MOST BUSINESSES HAVE THEM!

A huge number of our DSXpress customers are companies in remote areas. Most of them have telexes! Once again, our telex machines are ready for you 24 hours per day - and you can be assured your order will receive instant attention.

Our Telex Number: (AA) 20036. Answerback: DICKS

(5) ORDER BY TELEGRAM: IT'S SPEEDY!

Even if you don't have a telex, you can have your order delivered at almost the same speed by using the Australia Post Telegram Service. Many of our remote area customers find it extremely convenient - and you can have the telegram delivered to us, or delivered to our Telex number.

Telegraphic Address: Diksmitt, Sydney.

(6) ORDER BY REPLY ENVELOPE: WE PICK UP THE TAB

If you've ordered from us before, you'll know we include a business reply paid envelope with your order. The next time you order, it costs you absolutely nothing to pop it into the mail. No postage stamp required - unless you happen to live outside Australia!

(7) ORDER BY MAIL: THE OLD FAITHFUL

If you haven't ordered from us before, you haven't had a chance to find out about a lightning fast service and all the services we offer. And you also won't have a BRP envelope. So for this first time, use the mail order form offering free freight and we'll pick up that tab instead!

And then you'll know how easy it is; how convenient to shop from the comfort of your own home through DSXpress. And you'll have a reply-paid envelope - so you'll never have to pay the postage to us again!

"AND FOUR FANTASTIC WAYS TO RECEIVE YOUR ORDER TOO..!"

And we subsidise freight, too!

After you've used the special 'freight free' order form in this catalogue (sorry, we can only do it once!) why not take advantage of our exclusive freight deals.

Because of the HUGE amount of freight we despatch every day, we've been able to arrange some very special prices with the freight companies:

(1) Air Freight: the quickest way of all!

Normal delivery is next day in most areas of Australia. How's that for service!

Express air freight: Just **\$15.00** anywhere in Australia (up to 10kg).

'Can't Wait' rate: Even quicker! **\$7.00** up to 4kg anywhere in Australia.

Overseas air freight: DSXpress International will be glad to send you a special overseas order form detailing overseas postage rates.

(2) Road Freight:

Great for heavy and bulky items. **\$10** anywhere in Australia.

(3) Post:

And not just ordinary post, either! We courier all post bags to interstate capitals and post from there. Saves your package lots of time (it doesn't get caught up in the Redfern Mail Monster!)

(4) Local Courier:

If you're in the Sydney metropolitan area, DSXpress will courier your package to you using either VIP, standard or budget courier systems. And you can charge the goods to your credit card!

AND FOR DSXpress CUSTOMERS, WE OFFER OUR EXCLUSIVE 14 DAY MONEY BACK SATISFACTION GUARANTEE!



WHY YOU SHOULD INSIST ON A QUALITY DICK SMITH KIT!

OUT IT GOES! WE'RE NOT HAVING THAT IN OUR KITS!



If it's not a prime spec, brand new component - it doesn't go into a kit. We won't play the game others will try: inferior substitutes, second quality, manufacturer's rejects, etc. Our quality controllers are there to make sure nothing 'slips through' - so you don't find a crook component in your kit.

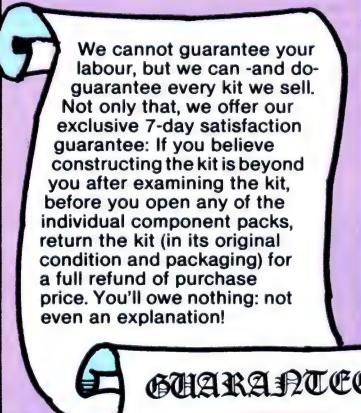
...THE THINGAMAJIG IS CONNECTED TO THE GIZMO, WITH THE WATCHAMACALIT EXACTLY...



Our kits are complete: even to the special step-by-step instructions* Don't fall for the old photocopy of the article trick: it usually doesn't have enough information to build the kit successfully. And if it doesn't have a quality control card... it obviously hasn't had any quality control! Send it back - and get your kit from Dick Smith Electronics.

* included with most kits.

OUR KITS ARE GUARANTEED!



We cannot guarantee your labour, but we can - and do - guarantee every kit we sell. Not only that, we offer our exclusive 7-day satisfaction guarantee: If you believe constructing the kit is beyond you after examining the kit, before you open any of the individual component packs, return the kit (in its original condition and packaging) for a full refund of purchase price. You'll owe nothing: not even an explanation!

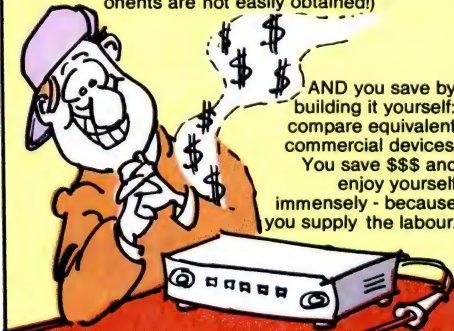
GUARANTEE

AND WE EVEN HAVE OUR OWN KIT DESIGNERS!



Many of the kits you see in the magazines were developed by our own engineers. Our research & development dept. is working on new ideas all the time! Sometimes we allow them out (but not during the full moon).


THINK OF ALL THE MONEY I'VE SAVED!



Actually you make a double saving: You save because our kits represent a saving over the individual component price (many kit components are not easily obtained!)


AND you save by building it yourself: compare equivalent commercial devices. You save \$\$\$ and enjoy yourself immensely - because you supply the labour.

SORRY, DICK - IT DOESN'T WORK...



Only we have the 'Sorry Dick', it doesn't work' service. On many of our more complex kits, we offer a special low cost repair service if, for some reason or another, you cannot get the kit to work. We'll find the fault and get it back to you for one (low!) nominated service fee. This fee is way below ruling repair rates, and is available only on specifically nominated kits. (We reserve the right to return your kit and service fee if our engineers consider the kit is so badly constructed as to make economic repair impossible).

NOW I KNOW WHICH ONES I CAN BUILD!



And you'll know, too: all our kits have a special 'star guide' to show you how simple or complex construction is. One star means it's ok for the beginner. Two stars means some electronics construction knowledge is necessary (eg. the average hobbyist, with good soldering and construction techniques and perhaps digital or RF knowledge, etc).

OVER 300,000 KITS SOLD

KITS TV/RADIO

STEREO TV DECODER



\$249

As described in EA

TV sound can be very high quality - especially now it's being transmitted in stereo. But 99.9% of TV sets can't take advantage of this because they're only equipped for mono sound. And 99.9% of people aren't willing to get rid of a perfectly good colour telly just to get stereo sound! Especially when a new stereo colour TV can set you back the best part of a tidy bit!

Here's the Dick Smith Electronics - low cost - solution.

Build this stereo TV decoder and get full hi-fi quality stereo television sound for just a fraction of the cost of replacing the telly!

You have a choice of building the decoder with its own power amplifiers - or you can simply feed the output into your hi fi stereo system to cut costs even further.

The result: stereo TV sound you'll be proud of!

And even more: included is a TV tuner which picks up UHF - so if your telly can't quite manage UHF you're even further in front!

Cat K-6325

★★★

TELETEXT DECODER



\$199

Another money-saving kit from Dick Smith Electronics - bringing you the latest in technology at a fraction of the normal cost.

Teletext - that mine of information given out free by a lot of TV stations - hasn't really taken off in Oz: mainly because of the cost of Teletext Televisions (most are around or over the big \$1000 mark!)

It's a pity, really because there is so much information available - and the system will expand greatly when there is more acceptance.

Teletext information is transmitted during the otherwise 'useless' period between each TV frame (the black line you see with colours flickering if the vertical hold is out!)

All you need is this adaptor to pluck out the information, and hold it for display on the TV screen. You can have Teletext only, or a mix of Teletext and picture, or even news flashes and, perhaps most important of all, captions for the deaf on many programs.

We've kept the price way, way down by designing this Teletext converter to be used in conjunction with a VCR (or the Stereo TV tuner at left!).

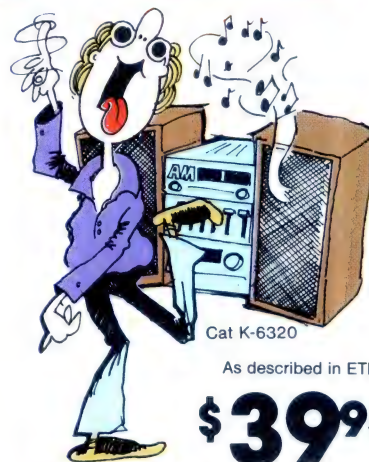
Check with your local TV station(s) to ensure Teletext or captions are being transmitted before commencing construction!

Cat K-6315

As described in EA

★★★

AM STEREO DECODER



Cat K-6320

As described in ETI

\$39.95

And the latest high-tech innovation is Stereo AM Radio. So new, in fact, that at time of going to press, only about 40% of radio stations in Australia were transmitting stereo!

Stereo AM makes your ordinary radio listening take on a whole new dimension. And despite what the FM stations try to say, AM stereo is at least the equal of FM - sometimes even better!

Our Stereo AM adaptor kit is designed to add to most wide-band AM mono tuners - typically hi fi tuners. It is not suitable for adding to most types of 'trannies' - small transistor radios, three-in-ones, etc. The performance of the AM tuners in these devices is not sufficient to allow the AM stereo detection to work satisfactorily.

It is relatively easy to add (full, detailed instructions included), but some knowledge of electronic construction techniques and trouble shooting is advised: after all, you're attacking a commercial device and you will certainly void any warranty it has! ★★★

VCR Sound Processor

\$49.95



Unless you're lucky enough to have one of the new hi fi videos, the sound from your VCR is probably pretty pedestrian! Now you can give it a lift with this VCR Sound Processor!

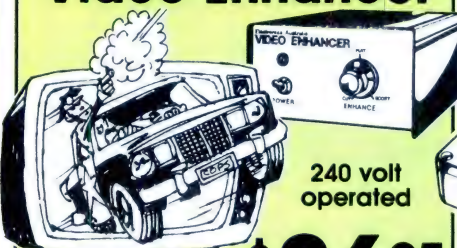
It includes an effective stereo simulator circuit, a 5 band graphic equaliser to make up for the crook audio and your (probably) equally crook listening room plus noise filtering to get rid of tape hiss and other unwanted high frequency noise.

Cat K-3422

As described in EA

★★

Video Enhancer



240 volt operated

\$36.95

As described in EA

If the sound on your VCR is crook, what about the video! Especially when you're making copies of tapes (yes, the ones you shot yourself of course). Make sure you don't lose detail when dubbing: use the EA video enhancer.

Very simple to use: all control is via one knob. And unlike most enhancers, you can cut as well as boost (ideal for softening harsh pictures).

Cat K-3463

★★

Poor TV signal area? Build the TV Masthead Amp (Mk2)



As described in EA

\$33.50

Don't put up with lousy TV (we can't do much about the content, but this kit should fix the pix!) Reduces or even eliminates snow, also great for reducing ghosting. Covers both UHF and VHF TV bands plus FM bands.

Includes 240V supply in price.

Cat K-3232

★★

Stereo Simulator II



Wish those old video movies had modern stereo sound? This low-cost gadget turns almost any mono signal into amazingly good synthetic stereo! Cat K-3421

As described in EA

\$21.95

★★

Video Modulator

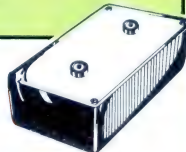


\$5.25

Cat K-3462

For computers, videos, etc with standard composite video output: now you can build this modulator and have an RF output as well - so you can use it on a standard TV set. Output on VHF channel 0 or 1.

UHF/VHF Down-converter



\$39.95

As described in EA

If you can't pick up UHF TV on your VHF TV, this kit could solve your problem. Also ideal for UHF VCR's on VHF TV's. Complete with double sided PCB, connectors and instructions. Cat K-3235

★★

KITS AMATEUR

70cm Amateur Transceiver



The one that started it all! Now almost 1000 DSE UHF Explorer transceivers have been built and, from the reports we've received, very few problems have been found: most constructors are delighted with the ease of assembly and the performance.

It's definitely **not** a kit for the beginner (after all, you need an amateur licence to use it!) and we strongly advise both UHF and digital troubleshooting experience, as well as professional standard of construction (UHF is not kind to sloppy constructors!)

The result: you'll end up with a transceiver at least the equal of most commercial units, at a fraction of the cost (now that the dollar's gone through the floor!)

Specifications:

Frequency: 438.025-439MHz in 25kHz steps
No of channels: 40
Mode of operation: FM
Supply req.: 13.8V DC 2A (5W output)
Receiver: Dual Conversion Superheterodyne
Sensitivity: 0.4uV for 20dB quieting
Selectivity: -6dB 7.5kHz; -60dB 15kHz
Adj. chan rejection: Better than 80dB
Power Output: 5W (typical)

Repeater Upgrade Kit

Add-on kit to give your Explorer full repeater operating capability, plus S-meter, an additional crystal filter and a new front panel to take S-meter and repeater switching.

\$199

Cat K-6300

★★★

\$2450

Cat K-6302

2m Amateur Transceiver



The perfect mate for the UHF kit. The DSE Commander VHF transceiver has been developed in response to the huge number of requests from our customers; those who had the 'Explorer' under their belts and had been bitten by the old 'home brew' bug! (In fact, a number of customers said they didn't really need another 2m transceiver: they'd built it for the sheer fun of making something again!)

The 'Commander' has specs which more than match most commercial transceivers selling for two and three times the price. It covers the full 144-148MHz band in 10kHz channels (with 5kHz offset), with full repeater facilities built in. And it delivers around 10-15 watts with a receiver sensitivity of 0.5uV or better!

The DSE Commander comes complete with a very comprehensive step-by-step construction manual (including a 'Sorry, Dick it doesn't work' repair coupon) plus microphone and mobile bracket. Nothing more to buy!

Specifications:

Frequency: 144-148MHz in 10kHz steps (5kHz offset)
Mode of operation: FM
Supply req.: 13.8V DC 2.5A (15W output)
Receiver: Dual Conversion Superheterodyne
Sensitivity: 0.5uV for 12dB quieting
Selectivity: Better than 60dB at plus/minus 25kHz
Power output: 10W nom, 15W max

Complete with full repeater capability (plus/minus 600kHz).

★★★ **\$199**

Cat K-6308

'Glass RTTY' for your VZ-200 or VZ-300 computer

... the low cost way to get into teletype!

At last there's a way for the amateur to get into RTTY without spending a fortune! The 'Glass RTTY' project gets you on the air for under seventy dollars (if you own a VZ!) Try beating that!

The VZ-200 has a very good name for its low radiated rubbish (unlike many of the 'big name' computers) - making it ideal for use in the shack. And the new VZ-300 has been designed along similar lines: and looks like earning a similar reputation.

(By the way, VZ-200's are starting to appear on the second-hand market at really bargain prices!)

Twin PCB construction makes the RTTY decoder simple to build - and the whole lot fits into a case (supplied) that simply plugs into the expansion port on the rear of the VZ. There are DIN connections for the transceiver's speaker, mic and PTT.



Features:
 • 1K (1024 character) 'write ahead' buffer
 • WRU buffer
 • 7 pre-programmed EPROM messages
 • Single letter commands for ease of operation.

Now includes full details on how to adapt kit for reception of commercial RTTY on an HF receiver!

★★★

\$6950

Cat K-6318

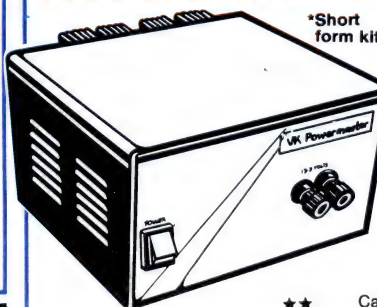
For the UHF or VHF transceiver: 13.8V 2A Power Supply



Matching supply for the Explorer UHF or Commander VHF transceivers. Built in the same style, supplies 13.8 volts regulated at 2 amps continuous. The perfect way to complete your home brew station. Cat K-6310

★★ **\$4950**

VK Powermaster 13.8V - 25A Pk!*



*Short form kit

Need more oomph? You'll get it with this superb supply. Designed with total flexibility in mind: you choose the transformer you want for your application. If you want to run an amateur transceiver or a linear amp, use the M-2010 transformer and get a whopping 14 amps continuous or 25 amps peak! For lighter applications, try the cheaper M-2000 transformer: it will give you 6 amps continuous and 10 amps peak! Has electronic fuse protection (short circuit/overload), and is housed in a specially designed heavy duty aluminium case with plenty of room for meters, etc should you desire.

★★

Cat K-3448

Transformers to suit: 14 A continuous M-2010 \$54.50
 6 A continuous M-2000 \$24.95

\$9900

NEW KITS COMING ALL THE TIME: The kits on this page are just some of those developed in our own laboratories. We're working on more right now: keep your eyes open!

KITS AUDIO KITS AUDIO KITS

"A stereo amplifier that will equal or better just about any integrated commercial amplifier, regardless of price..."

Leo Simpson, Editor,
Electronics Australia magazine.

A price/
performance
breakthrough...

Playmaster Series 200 Hi Fi Mosfet Amplifier

This is the one you've been waiting for. The all-new Playmaster Series 200 Integrated Amplifier is almost certainly the **best** build-it-yourself design to be published **anywhere in the world!** Feature for feature, dollar for dollar, it more than stacks up against the 'big names' in hi fi - with the big price tags to match.

And it has features that aren't even found on many of the 'names'. Features like electronic input switching. Circuitry to handle just about every input imaginable: moving magnet, moving coil, CD player, hifi VCR, cassette, tuner, etc etc etc. Plus, of course, incredible 'headroom' with 100 watts per channel output power. And much, much more!



Cat K-3516 ★★★

Despite its unbelievable level of performance, the Playmaster Series 200 is amazingly simple to construct: much, much simpler than previous kits. Gone are the days of tedious cable cutting, stripping, soldering and checking. The Playmaster Series 200 design has eliminated 99% of assembly problems. All potentiometers, input/output connectors, etc mount directly on the pcb itself (parts specially sourced overseas just for this amplifier!)

And don't forget the exclusive Dick Smith Electronics kit features:

- Solder-masked and silk-screened PCB to help eliminate errors.
- Power transformer with factory-wound low voltage winding (why wind by hand?)
- Special step-by-step construction manual
- Complete with our 'Sorry Dick, it doesn't work' repair service.
- PLUS our exclusive satisfaction guarantee: you can return the kit within 7 days if you think construction is beyond you!

OUTSTANDING SPECIFICATIONS:

- 100W/channel into 8 ohms
- Freq. resp. 8Hz-20kHz (-0.3dB) 2.8Hz-65kHz (-1dB)
- Hum -100dB below full output
- Unconditional stability into any load
- RIAA equalisation within 0.3dB
- Distortion < 0.01% max (typical) 0.003% 20Hz-20kHz
- Sensitivity: MM 2mV (80dB s/n) MC 200uV (75dB) Line 300mV (90dB) CD 2V (94dB)

\$439

GUARANTEE:

Don't be conned by vague claims and 'warnings' from tiny kit suppliers which do nothing except cast doubts on the design of this fine amplifier.

We guarantee our Playmaster Series 200 Mosfet Amplifier to perform to (or even exceed) the specifications of the Electronics Australia prototype. As always, upgrades are possible - and we always check these out with the magazine concerned for approval. Otherwise we do not have the right to use their registered trade mark on our kits! You can be assured that Dick Smith Electronics will not substitute inferior components - as some other kit suppliers do.

We have now supplied around twenty thousand Playmaster kits to the hobbyists of Australia and New Zealand. We are absolutely confident that the Dick Smith Electronics kit for the new Playmaster Series 200 Mosfet Amplifier will be just as successful - and like our others will become the kit which other suppliers try to imitate.

Dick Smith Electronics.

PLAYMASTER Mosfet Amplifier

A little less power... a lower price: that's the original Playmaster Mosfet Integrated Stereo Amplifier, as described in Electronics Australia magazine.

With a very respectable 45 watts per channel output (enough to blow your head off!) it has most of the features of its big brother above: all components are on a single pcb, which makes construction quite simple. And the sturdy chassis and solid heatsinking make it ruggedly reliable. It includes integral speaker protection on board, along with fuse protection against massive overload. And our kit features a professionally designed front panel designed to suit today's modern hi fi decor.

Comprehensive step-by-step instructions are included - so you should get it going first time. And just in case you do get into trouble, this kit includes our exclusive 'sorry Dick, it doesn't work' repair service coupon.

Amazing value for an amplifier of such impressive performance: compare it with commercial amplifiers and you'll agree!

Cat K-3515 ★★★

\$199⁰⁰



FEATURES INCLUDE:

- LED indicated input
- Loudness control
- Muting control
- Full speaker switching facility
- Stereo / Mono switching
- Tape monitor switch

As described in EA

SPECIFICATIONS:

Power Output (both channels)	45W into 4 ohms
Frequency Response	42W into 8 ohms
	30 Hz to 20 kHz within 1dB
	RIAA
Sensitivity	2mV phono
	190mV high level
Hum and Noise	73dB phono, 80dB other inputs
THD	0.2% at full power
	0.05% at normal listening levels
Stability	Unconditional

PLAYMASTER Graphic Equaliser

Get total control and flexibility with your sound system. With cut and boost of up to 13dB per channel you can make up for deficiencies in your listening area or sound source or even create special effects. (Big, booming bass: bewdy!) You can even make equalised tapes of those precious records. Features professional quality brushed aluminium front panel.

SPECIFICATIONS: Freq. response (Eq. "IN"): 10Hz to 10kHz +/- 25dB (-1dB @ 20kHz)
Boost & Cut: max. 13dB
Steps: 10 in each stereo channel (individually controllable).

As described in EA

\$139



Cat K-3500 ★★★

AUDIO KITS AUDIO KITS

Musicolor Mk IV

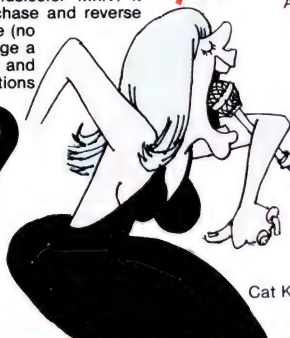
What's better than a colour organ and a chaser? The Musicolor MKIV: it combines both in one unit! Four chase patterns plus auto chase and reverse chase AND four channel colour organ with built-in microphone (no connection to speakers necessary!) means you're ready to stage a lightshow! Comes with sturdy case (good enough for pro use!) and exclusive DSE front panel with LED display. Detailed instructions supplied, too. Cat K-3143. ★ ★ ★



\$109

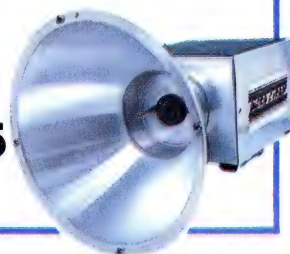
As described in EA

"See Your Music"



Light show strobe

A must for parties, dances, discos, etc. One of the most popular kits we have ever stocked. Includes a specially designed printed circuit board for all the components, PLUS provision for adding an extra tube to double the light output - easily and economically. The kit is complete with a 180mm photographic quality reflector, especially modified so a perspex safety guard (supplied) can be fitted. Also includes our special instruction manual and super long life capacitors. Flash rate is variable between one and twenty flashes per second.



\$39⁹⁵

Cat K-3152 ★ ★ ★

As described in ETI

LED Level Meter

Here's the one the beginner can build - and add to a mono or stereo amplifier to give a level meter just like those found on \$\$\$ imported amplifiers! You can build one and use it to show either a mono amp, one channel of a stereo amp or sum the channel outputs and show that (instructions show how). Or you can build a pair and have a true stereo level meter.

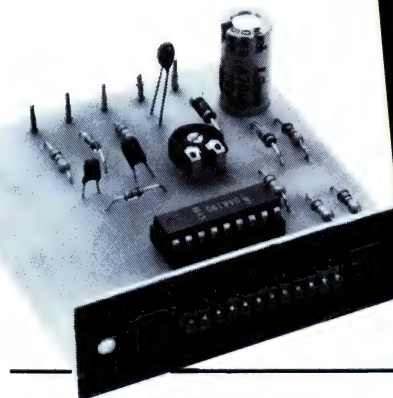
Has 10 green LEDs for display, one yellow for maximum power indication and one red for overload.

PCB is designed to have readout at right angles for easy mounting. Requires 10-16V at around 50mA (usually taken direct from preamp supply).

Cat K-3370 ★

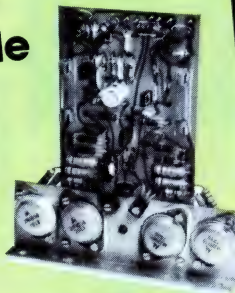
As described in EA

\$16⁹⁵



HIGH POWER ETI AMP 100 Watt Amp Module

100 watts RMS; 100dB signal to noise ratio at 5kHz: That's the ETI 480 amplifier. The ultimate in simplicity; even the power transistors mount on the one PCB. The PCB heatsink bracket is supplied, and the heavy duty fibreglass PCB has a silkscreened overlay to make the construction even easier! The design is based on the time-proven reliable ETI 422 power amplifier without the power transistor wiring hassles. Ideal for the home constructor or technician who wants to 'roll his own' amplifier system for home or professional use. Has on-board fuse protection. Input sensitivity: 1V. Use with K-3438 power supply. Cat K-3442



\$27⁹⁵

★ ★
As described in ETI

50 Watt Amp Module

Ideal for home stereo systems. Same design simplicity as the 100 watt module above, but cheaper because of lower power. And there's added economy as two units can be run from the one K-3438 power supply. An economical solution for those who want to update their old system without a huge outlay of money. The compact design makes this module the obvious choice wherever a medium power general purpose amp is required. Input sensitivity is 500mV. Supplied with exclusive instruction booklet and rugged fibreglass PCB with silk-screened component overlay for easy assembly. Heatsink bracket is supplied but heatsink itself is extra.

Cat K-3440 ★ ★ **\$21⁹⁵**

As described in ETI



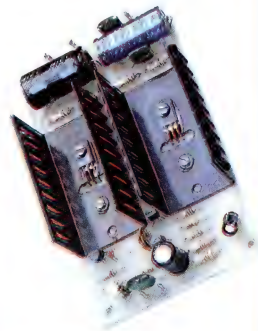
20 Watt Amp

A general purpose amp as used in television, tape players, musical instruments, sound projectors, etc. A handy device for any hobbyist to add to his workbench. Uses discreet transistors for reliability which provide the ideal opportunity for the hobbyist to gain an understanding of how an audio amp works.

\$14⁹⁵

★ Cat K-3445

Input Impedance: 100k ohm
Output Impedance: 0.1 ohm
Signal to noise: -58dB with respect to 1W
Frequency response: -3dB at 45Hz & 68kHz
Supply current (power): 20V(6.6W), 30V (12W), 35V (19W)



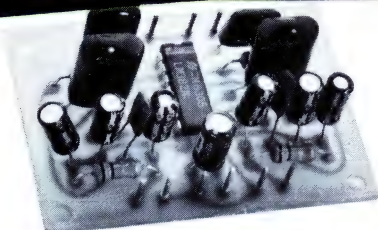
As described in EA

Mixer Preamp

Designed to suit the 300W amp kit, this mixer preamp has 4 inputs with an impedance of 100K - suitable for most microphones, guitars, etc. Ideal also for use with 50W (K-3400) and 100W (K-3442) power amp modules. This unit provides bass, treble and presence control. Instructions supplied. ★

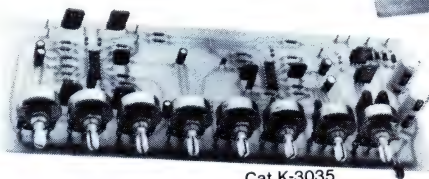
Short form kit: no case, transformer or power supply.

As described in ETI



ONLY

\$32⁹⁵



Cat K-3035

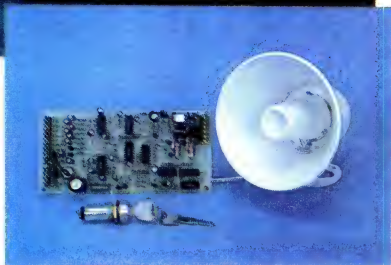
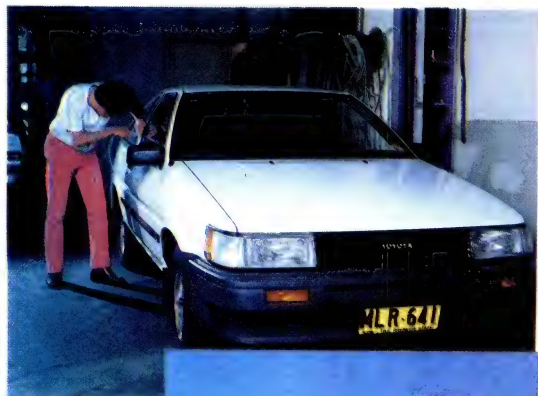
Stereo Preamplifier General Purpose

This amazingly versatile unit can be built as a magnetic cartridge preamp (for upgrading your stereo), a tape preamp or an auxiliary preamp with 40, 55 or 80dB gain. It is extremely simple: uses only one special IC and is very small, all parts fit on a PCB less than 65mm square. It does not need a special power supply as any reasonable power supply from 10 to 40V will do. Frequency response is well beyond 20kHz. Full instructions are supplied.

As described in ETI Cat K-3427 ★

\$8⁹⁰

KITS CAR



Deluxe Car Alarm

In December 1983, the 'Open Road' magazine (NRMA) gave ten features a car alarm should have. The best commercial system available had only eight.

This alarm system from Electronics Australia, has nine (and if used in conjunction with the ignition killer below, has ten!) You car needs protection. Good door locks and an ignition lock aren't enough. Build this incredibly effective alarm system and your car has the best chance it will ever have of being where you left it when you return.

\$67⁵⁰

Here's what it offers:

- Two delayed and six instant alarm inputs
- Delayed entry and exit times (10s each)
- Provision for auxiliary battery
- Siren output (in case vehicle horn is disabled)
- Flashing dash lamp, internal key operated on/off, etc

Cheap insurance for your vehicle!

Cat K-3252

As described in EA. ★★

NEW 85 Ultrasonic Detector

The perfect add-on kit for the Deluxe Car Alarm!
The problem with 99% of car alarms is that they cannot prevent the thief who breaks a window and reaches in for the goodies. While this kit won't prevent the window being broken, it will protect your property inside the car. Silent ultrasonic rays detect any movement and trigger the main alarm system.

\$19⁹⁵

Cat K-3251

★★

As described in EA.



FREE! (Cat L-5310) Alarm sticker with any car burglar alarm.

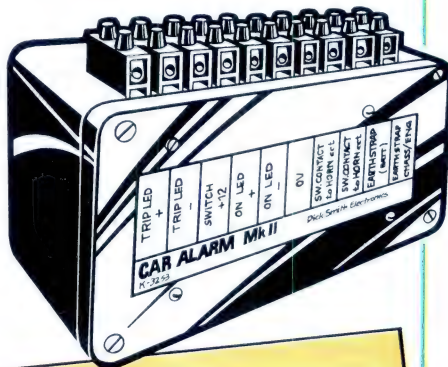
Car Alarm MK2

Includes die-cast case & terminal block

One of the most sophisticated, yet simple alarms around. It uses a triggering technique which makes it less prone to false alarms - a common problem with many car alarms, yet it will sense a voltage drop anywhere in the electrical system. For example, when a door is opened, or a jumper lead is applied to the starter, etc. It is housed in a virtually waterproof die-cast case to minimise ingress of moisture or fumes, and all connections are made to the terminal strip for easy installation and removal.

Cat K-3253 ★★

- Includes visual alarm 'on' warning.
- Simple additions give you variable alarm on time, variable horn pulse rate.



\$24⁹⁵

As described in ETI.

NEW 85 Brake Lamp Flasher

You've seen those snazzy lamps that mount on the parcel shelf and flash when you brake? A great idea for road safety, too: you cannot avoid the flashing! Now you can build your own with this simple kit - and save \$\$\$ on the commercial units. Flashes the lamp three times before holding on. Uses our A-8520 Rear Window Brake

Lamps (at extra cost).
Cat K-3245 ★

\$14⁹⁵



As described in EA

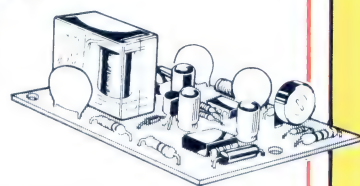
Economy Car Alarm

Low cost protection!

This alarm senses the voltage drop in your car's electrical system when a thief breaks into it. There's a visual warning for thieves so that chances are they will not even attempt a break-in. Easy to install - saves a lot of trouble.

Cat K-3250 ★ As described in ETI

\$13⁵⁰



Transistor assisted Ignition

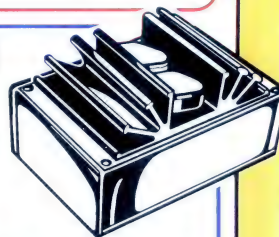
Electronics Australia's high energy

version of their previously incredibly popular kit. Now gives even better performance than before with circuit mods enabling high efficiency & stability, plus special radial fin design heatsink and die-cast box to get rid of that unwanted heat. Ideal for use in all conventional ignition vehicles (doesn't work real well on diesels!)

- Eliminates 'crossfire' problems on older 'CDI' circuits
- Dwell extension gives longer, hotter spark
- Compatible with modern electronic tachos

Cat K-3301 ★★ As described in EA.

\$36⁵⁰



LED TACHO

Don't spend a fortune buying a tachometer - build your own and save! Displays engine speed in an analogue form in an illuminated row of LED's. Instructions included - a great kit!

Cat K-3240

★



\$24⁵⁰

As described in ETI

Ignition Killer

Ingenious but simple circuit based on a 555 timer that literally kills your car ignition and then re-sets itself, making the thief think something is wrong with the engine. The theory is he'll then go and pinch someone else's car instead.

Cat K-3255

As described in EA

★

\$16⁹⁵



NEW FOR 85



Home Alarm

EA HOME ALARM: the best protection for your home, office etc.

What a superb kit! EA have thought of just about everything in the development of this design. It offers features which you'd normally find on \$200 and more commercial units (even ours!)

It offers:

- Security key operation for both alarm function and box access
- 2 instant and six delay sectors, capable of handling normally open or normally closed in any mix
- Inbuilt mains power supply with battery backup
- Siren (up to two speakers) PLUS bell (relay) output and also capable of driving telephone diallers, strobes, etc etc.
- Inbuilt local test facilities, including buzzer

And we've made the EA design even better: a heavier steel case, for example. And our kit includes our specially prepared instructions - so you won't have any problems!

Complete kit including case and all electronics.

Cat K-3424

★★★

\$120⁰⁰

Don't forget: we have a huge range of detection devices and output devices to add to your system - see security and alarm pages (10-13)

Battery to suit:
12 Volt 1.2Ah Gel Cell
Cat S-3315 \$22.50

SPEED CONTROLLER

A completely new circuit offering unbelievably smooth control and torque - even at very low rpm. Yes, it's even better than the previous model! New design includes 'in line' plugs and sockets for extra convenience. Suits virtually all 'universal' (brush type) motors:

\$21⁹⁵

- Electric drills and saws
- Food Processors
- Much, much more.

Cat K-3084

★★★

As described in EA

And the good news is... It's even cheaper than last year's model!!

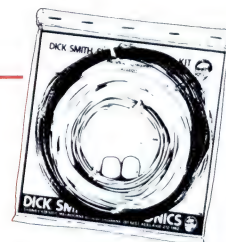


Shortwave Antenna Kit

WHY SPEND HUNDREDS OF DOLLARS ON A GOOD RECEIVER IF YOU ARE ONLY USING A PIECE OF STRING FOR AN ANTENNA?

Get the best reception from your receiver with this high quality short wave antenna

\$15⁹⁵



- Designed especially for Dick Smith by a short wave expert
- Complete and ready to assemble
- Needs no soldering
- Instructions included

Cat K-3490

★

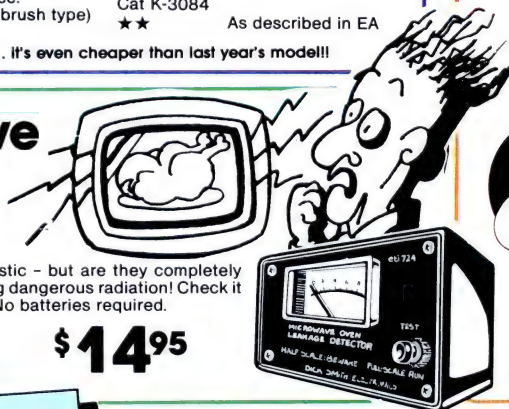
Microwave Leakage Detector

Microwave ovens are fantastic - but are they completely safe? Yours could be leaking dangerous radiation! Check it out with this handy meter. No batteries required.

Cat K-3095★

As described in ETI

\$14⁹⁵



SOUNDBENDER

With this great little kit you can sound like a Dalek, Darth Vader, a Cylon, or any one of a dozen robotic spin-offs! A versatile unit, it may also be used for special effects on electric guitars and other musical equipment.

Cat K-3509 ★

As described in ETI

\$32⁵⁰

As described in EA

Negative Ion Generator

\$42⁵⁰

You've heard all about Negative Ion Generators and their benefits, now buy the kit and find out what it's all about. Many commercial units run from the mains, but our kit is safe - it runs on 12V DC, which also means that you can put one in your car! Kit includes exclusive Dick Smith emitter head, power pack and tough moulded plastic case. Cat K-3335★★



Super Siren

This siren has got an ear-splitting sound yet it is compact and draws very little current. It uses a piezo-electret tweeter, which can be soldered directly to the PC board. Has many uses: as an equipment malfunction alarm, intruder alarm, car alarm (separately powered and not dependent on the car battery).

Cat K-3505 As described in EA★



\$21⁹⁵

Fluoro Starter

Do your fluorescent lights go blink, blink, blinky blink when you switch them on? This substitute electronic starter solves that problem and gives a smooth rapid start EVERY time you switch on. And all the parts are housed in a standard starter case! Far outlasts conventional starters as well as prolonging tube life.

Cat K-3082 As described in EA



Give tubes longer life!

\$4⁹⁵

Uses old starter case! ★

Music Generator

This is a great little kit for the beginner or the experimenter. It uses a very special IC which is pre-programmed with two popular tunes: 'Green Sleeves' and 'Home on the Range'. It also has the popular 'dingdong' plus an alarm tone. A few more components and a printed circuit board complete the kit. It is intended for novelty or alarm applications.

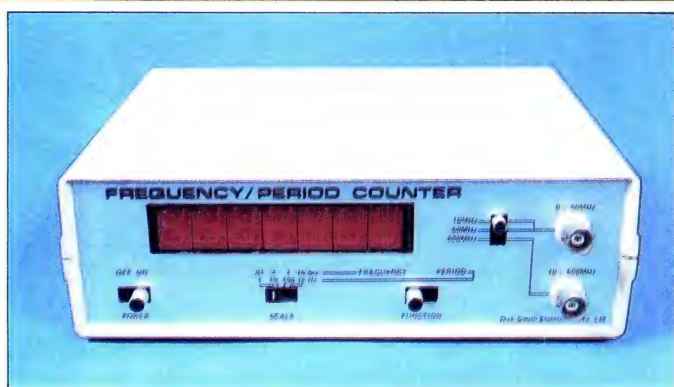
Cat K-3512

★



\$12⁹⁰

As described in EA



The Dick Smith 500MHz Digital Frequency Counter

Superb design uses the latest IC technology. The low component count makes it very reliable and easy to build. It will measure frequency to 500MHz (with optional pre-scaler) and period both with a 7 digit resolution. It rivals the performance of commercial units costing many times the price. This kit is supplied with the exclusive Dick Smith simplified circuit board wiring, step-by-step instructions and a quality pre-punched and silk screened front panel and case.
Based on EA DECEMBER 1981 design Cat K-3439 ★★★

Features include:

- Professional design and finish, uses high quality instrument case.
- Extremely easy to build, virtually no PC board wiring and all of the switches are integrated to the display board and front panel.
- Huge, bright high efficiency, 7 segment display.
- 3 frequency ranges, 0-10MHz, 0-50MHz, 10-500MHz (with optional pre-scaler).
- 4 gating times, .01, .1, 1, 10 seconds.
- 4 period measuring ranges, 1, 10, 100 and 1000 input cycles to give a 0.1 uS resolution.
- High input sensitivity, 10mV to 30MHz, 100mV to 50MHz @ 1M input impedance.
- High accuracy, typically better than $\pm 0.005\%$.
- 240V operated.

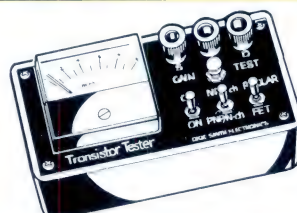
**NOW INCLUDING
DICK SMITH
EXCLUSIVE
MOULDED CASE
ONLY**

\$125
(50MHz version)

Pre-scaler Accessory for your counter

Improve the performance and increase the range of your K-3439 Frequency Counter to a more professional range of operation ... 10-500MHz. This kit adapts to the existing frequency counter PC board. Cat K-3432 ★★
As described in EA

**ONLY
\$34⁵⁰**



speedy fault finding Transistor Tester

Not just another Transistor Tester! This one tests bipolar transistors, diodes, F.E.T.'s and even S.C.R.'s and P.U.T.'s. This practical low-cost test instrument is simple enough to be built by a beginner and then provide him with a valuable piece of test equipment. You can get experience in building, then use it to learn about the operation of semi conductors, or use it for more serious checking. Ideal for the beginner and serviceman alike, or in schools. Battery operated and supplied with one of our new 50mm meters in a deluxe Zippy case.

Requires 9V battery Cat. S-3006 85c extra

K-3052 ★

Amazing Value \$19⁷⁵
As described in EA

Turn your old TV into a CRO!



Got an old B&W TV gathering dust in the corner?

Turn it into an audio CRO! That's right: this remarkable kit turns any surplus B&W (or even surplus colour) TV set into a 300kHz audio oscilloscope! It gives a good display at low frequencies, making it ideal for Hi Fi & audio display applications. All it needs is 100mV to drive it to full screen deflection. The large screen size means that it gives a dramatic display: just think of the non-technical applications of such a device: promotions. Hi Fi showrooms etc. If you can't afford proper CRO - this could be the answer!

★ Cat. K-3060

As described in EA

**Yes, your own CRO
for ONLY**

\$33⁹⁵

ETI 480 PS Power Supply



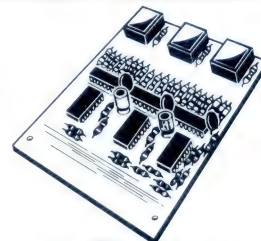
Full PCB and component kit for one K-3442 or two K-3440 modules. Supplied complete with speaker detump relay and Zener regulated plus & minus 15V preamp rails. Special assembly instructions supplied. SEE ETI
Cat. K-3438★

**VALUE
AT \$21⁹⁵**

3 Digit Counter

The most versatile counter circuit around - you can use it with a minimum of external components. Designed for maximum flexibility (display can be removed for external mounting and with a very wide operating voltage (5-15V).

- Led display
- Up to 2 MHz counting speed
- Clock enable
- Wide power supply range
- Very comprehensive manual incl.!



Cat K-3451★

\$21⁹⁵

The Dick Smith

Variable Power Supply: 30V/1A

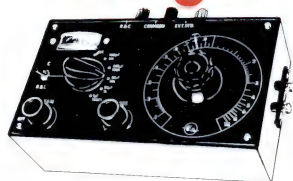


Ideal for laboratory, amateur/experimenter or technician use. 30 volts at up to 1A - very handy! Includes full metering and overload protection. Cat K-3475
As described in ETI

★★

ONLY \$65⁰⁰

R-L-C Bridge



Measure the values of new and used components easily and simply. You can measure resistance, (10 ohms to 10 Meg-ohms), capacitance (10pF to 10uF) and inductance (down to a few hundred microhenries). The RLC bridge does more than a multimeter, and is easy to use. The complete kit of parts includes a specially printed front panel. **Battery not supplied.**

Cat. K-3468★★

Measures unknown components
at only **\$42⁵⁰**

As described in EA

Sine & Square wave Oscillator



Covers frequencies from 15Hz to 150kHz. This is one of the most useful pieces of equipment on the experimenter's bench. This simple design is easy to build and a great performer. Runs from a 9V battery. All parts are supplied including specially printed front panel, attractive 'Zippy' case and full instructions. **Battery not included.**

Cat. K-3469★★ As described in EA

ONLY **\$43⁵⁰**

Function Generator with digital readout



\$89⁰⁰

As described in EA

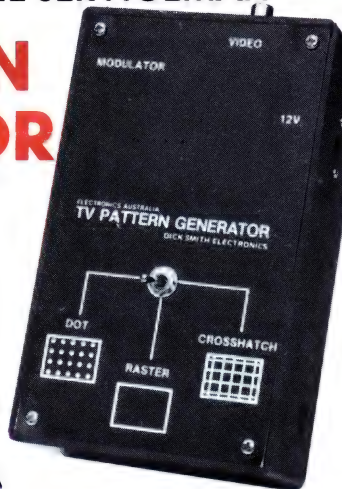
A BUILD-IT-YOURSELF BARGAIN FOR THE SERVICEMAN

TV PATTERN GENERATOR

With just seven IC's you get three patterns: dot, crosshatch and blank raster. Not bad value, huh? An indispensable aid for the serviceman or hobbyist - and this one's small enough to carry around anywhere. Includes deluxe front panel and VHF modulator. Operates from plug-pack adaptor (9V DC).

Cat. K-3472 ★

As described in EA



ONLY

\$33⁹⁵

Plug pack adaptor to suit Cat M-9525 **\$12⁵⁰**

EXCLUSIVE!
VIDEO MODULATOR
INCLUDED
IN THIS KIT!

Keyboard Kits

Standard 'QWERTY' typewriter layout keyboard with individually switched keys (no matrix necessary!) High tactile response, suitable for a huge range of computer & allied projects.

- 60 keys

\$53⁹⁰

Cat K-3601 ★

KEYBOARD KIT

General purpose keypad suitable for computers and many other projects. 14 keys mounted on board ready to install in your next project.

\$19⁹⁵

Cat K-3622

Video Modulator

NEW improved model! As used in computers, video games, etc. Outputs on Australian VHF channel 1 (can be modified to CH 0); allows video output to be converted to standard TV input. Pre-built, pre-aligned.



\$9⁹⁵

Cat K-6043

Reflector

Handy 180mm aluminium dome reflector. Suitable for strobe, small photo lights or anywhere broad light coverage is required.



\$5⁵⁰

Cat K-6016

Misc. Crystals

32.768kHz — Watch Crystal.
Cat K-6030

\$3⁹⁵

3.58MHz — As used in frequency counter kit.
Cat K-6031

\$3³⁰

4.43361875MHz — Pal colour sub-carrier frequency.
Cat K-6033

\$4⁵⁰

LCD PANEL METER

A versatile accurate panel meter using a large liquid crystal display for low power consumption. The PC board design allows for maximum flexibility to cater for varied mounting arrangements. The low cost makes it ideally suited as a readout device on many projects, at both amateur and professional level.

Cat K-3450★

\$37⁹⁵

Features:

Display:	3½ digit LCD
Full scale reading:	200mV
Accuracy:	less than 1 digit
Resolution:	100uV
Polarity:	automatic
Input impedance:	greater than 10 ¹² ohms
Input bias current:	±2pA
Conversion method:	dual slope
Reference:	Internal 100ppm
Power supply:	±5V to ±15V dc 1mA @ ±5V



An essential piece of test and design gear for all hobbyists, amateurs, service technicians, engineers . . . produces sine, triangle and square waves from below 20Hz to 170kHz with a very wide range of output levels too. An ideal companion to our other build-it-yourself test equipment.

CHECK THESE FEATURES:

- Frequency range from below 20Hz to 170kHz in three ranges
- Continuously variable output level from 3mV to 2.5V peak-peak.
- 600 ohms (nominal) output impedance.
- Sine, triangle and square waveforms.
- Sine wave distortion of less than 0.7% at 1kHz; 1% at 10kHz and 2% at 100kHz.
- Triangle wave linearity better than 1% at 1kHz.
- Square wave rise-time of 0.4us (6V/us at maximum output level).
- Negligible overshoot, droop or ringing.
- Readout accuracy ±2%±one digit.
- Amplitude stability better than 0.1 dB on all ranges.
- Power consumption of 7W at 240V AC.

Cat. K-3520★★ SEE EA

FUNWAY

INTO ELECTRONICS

Why don't you join the thousands of people, young and old, who have discovered Dick Smith's Fun Way Into Electronics.

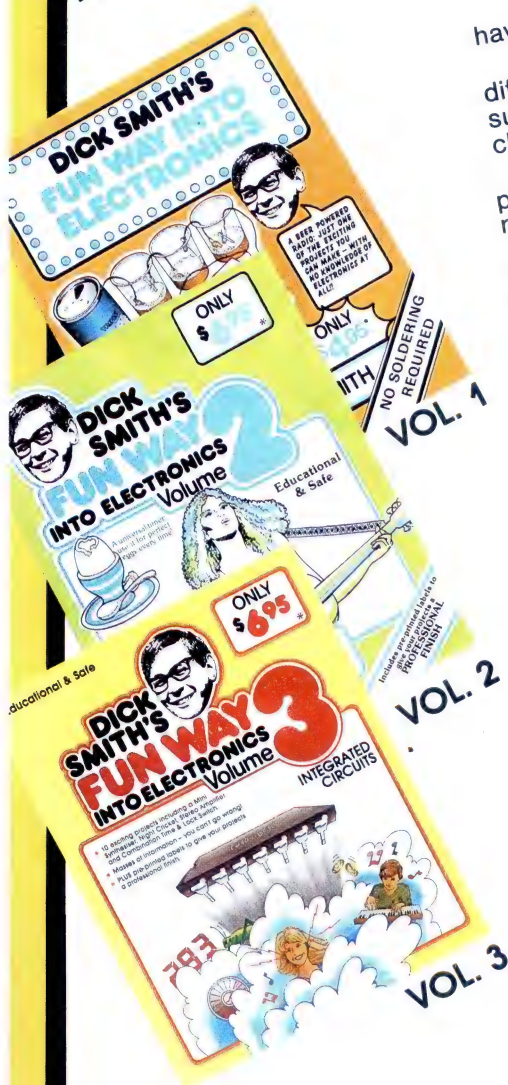
Electronics should be fun, but far too often, it is presented as a difficult, mysterious subject. Even books for beginners have not been successful in breaking down this barrier. Dick Smith Electronics changed all that with the Fun Way Series.

From the very basics of Fun Way One through to the advanced projects of Fun Way Three, electronics is dealt with in a fun way that's really easy to understand and, most of all, enjoyable!

There are fifty projects to build, between the three books, catering for all levels. Fun Way One starts off with the very basic, and by the time you're through that, you're ready for the more advanced projects in Fun Way Two.

Then you can move into the "big time" with the projects in Fun Way Three. You'll understand what components do, how they do it and how to use them.

And you'll have had fun doing it: That's Dick Smith's Fun Way Into Electronics!



Parents Note:

Fun Way projects have been designed to be completely safe for even the youngest constructor. They are all battery operated and use no dangerous voltages or components.



VOLUME 1

Where it all began! The best selling manual now used as an introductory textbook in countless schools, colleges, youth groups, etc etc around the world.

Fun Way 1 assumes you know absolutely nothing! It will show you what the components look like, how to connect them into the circuit, even how to go on with further experiments with your circuits when they are finished.

For complete safety, no soldering is required. All components are connected by screwing them into our unique 'breadboard' system with cut-out plans showing where the components actually fit.

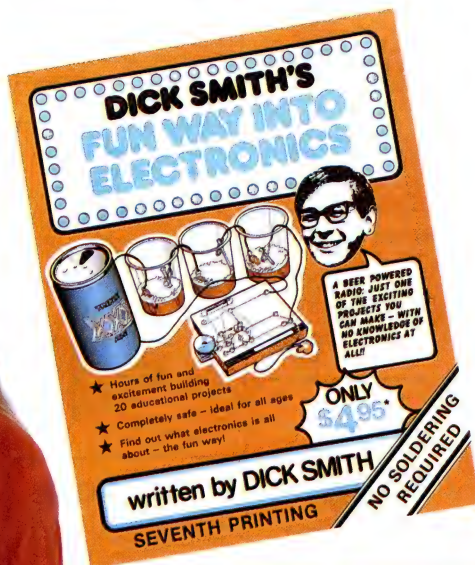
And even more: you'll learn what each circuit symbol looks like as you use it!

Cat B-2600

Fun Way 1:

The ideal introduction for beginners from 6 to 66!

\$4.95



To build these projects you will need:

Fun Way One Project Kit 1 - 10



Enables you to build any of the first ten Projects in Fun Way One. And because the components are not soldered, they are all reusable so you can build any other of the first ten projects, too. Cat K-2600

\$7.25

1. Continuity Indicator
Just like a multimeter - it will show you if you have a complete circuit or an open circuit. A light emitting diode glows if the circuit is complete.



2. Transistor Tester
As well as telling you if your transistor is okay, it shows you how transistors work!

3. Water Indicator
Do your plants need a drink? This simple circuit will tell you how much water is in the soil!

4. A Light/Dark Indicator
Using a light dependent resistor, it will light a LED if light falls on it. The type of detector used in some alarms.

5. The Flasher
Want to add flashing lights to a model train layout? This project will do it for you!



6. An electronic Siren
A mini version of the siren on Police cars! Fantastic to add to toys!

7. Dog and Cat Communicator
Dogs and Cats can hear sounds we can't! You could be able to talk to your pup in secret sounds!

8. A Decision Maker
As used by top executives and politicians! Just press the button and it will decide for you: Yes or No!

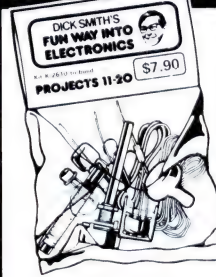
9. Morse Code Communicator
Amateur Radio operators send Morse code all over the world. You can learn the code too (or send secret messages!)



10. Music Maker
Your own electronic organ. And it really will play simple tunes, too!

To build these projects you will also need:

Fun Way Project Kit 11 - 20



Contains the more specialised components required to complete the last ten projects (11 - 20) in Fun Way One. Note: you will also need the 1 - 10 kit above to build these projects. Cat K-2610

\$7.90

11. Sound Effects Generator
Ever wondered how many of these sound effects are made in the movies? Build this and you can make some of your own!



12. A Crystal Set
Free radio - no batteries to buy, nothing to turn off! Listen in to your favourite station!

13. One Transistor Amplifier
Build your own amplifier: it can be used with the crystal set and other projects if you wish!

14. Beer Powered Radio
Yes, it actually runs on beer (or Coke!). Listen in (as long as you don't drink the battery!)



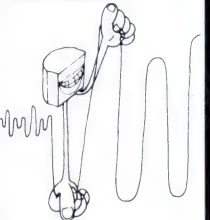
15. Two Transistor Amplifier
Even more power - enough to drive a speaker so you can listen in without headphones.

16. The World's Simplest Transmitter.
Just like the young Marconi, you can transmit Morse Code across the room!

17. Voice Transmitter
Imagine being able to transmit your voice to a radio set! This project makes it easy!

18. CB Radio Receiver
Listen in to the truckies and other CBers. And you don't have to spend Z\$\$\$ on a CB!

19. Amateur Radio Receiver
A radio receiver to listen in to ham operators plus other stations in the 2 - 6MHz bands.



20. Radio Booster Amplifier
A radio frequency amplifier to give other radios even better reception.

FUNWAY 1

GIFT BOX

Here's what you get:

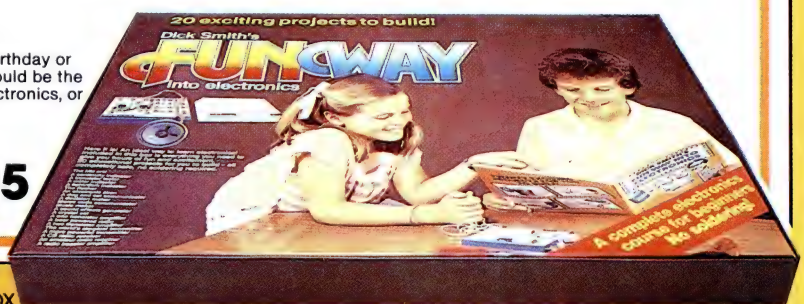
All the components AND Fun Way 1 book in a great pack - everything needed to build any of the projects in Fun Way 1! PLUS our specially manufactured re-usable plastic 'breadboard' - a great way to build not only the Fun Way 1 kits, but also to 'mock-up' other circuits as you become more experienced.

AND EVEN MORE! Everything is housed in a multi-division plastic tray, which is fantastic for housing components in, both now and in the future.

The Fun Way 1 Gift Box makes an ideal birthday or Christmas present... and who knows: it could be the start of an absorbing lifetime hobby in electronics, or even an exciting career!

Cat K-2605

\$19.95



VOLUME 2

You've built all the projects in Fun Way 1 - and looking for something new. Something bigger. Something better. Something more exciting...

Here it is: Fun Way Volume 2! It takes over where Fun Way 1 finishes, with 20 exciting new projects to try out.

But these projects are different! They're all built the modern way - on printed circuit boards. Which means, of course, all components are soldered into position.

Don't know how to solder, or use printed circuit boards? No worries, Fun Way 2 teaches you how. You'll find out how to get a good solder joint, and how to avoid the pitfalls.

And the projects themselves have all been specially chosen to be 'useful'. Just look at the project on the right and you'll agree! They're all battery operated, so there's no danger either!

Also includes features on pioneers of electronics, plus 'how to use a multimeter'.

PLUS! Specially printed labels to make your circuits look really professional! Great for school projects, too! Cat B-2605

\$6.95



FUN WAY 2 KITS

There's something here for everyone! Safe - simple - economical - fun! Each kit contains brand new, guaranteed components.

1 Flasher



Make it as the latest in electronic jewellery, or a burglar warning light, etc. The choice is yours and it's easy! Cat K-2621

\$2.95

2 Ding Dong Doorbell

Yes, it actually sounds like a great old fashioned doorbell. But it's electronic: and you can build it! Cat K-2622

\$4.50

3 Morse Code Trainer

You can turn this audible alarm into just about anything requiring sound. Even for Morse code - and it's fun to learn! Cat K-2623

\$6.50

4 Universal Timer



Eggs too hard? Time them with this great little timer. It really works - set it for a few seconds to 15 minutes! Cat K-2624

\$5.50

5 Electronic Dice



Just as much fun using it as it is building it! And it is really random - no cheating with this dice! Cat K-2625

\$4.95

6. Mono Organ

Snazzy little circuit uses the back of the PCB as the keyboard! Play a tune - it's easy. Cat K-2626

\$7.95

7 Pocket Transistor Radio

Building this small set will teach you a lot about the fundamentals of radio. And then you'll have fun using it too! Cat K-2627

\$7.95

8 Touch Switch

Ever wondered how those lift buttons worked? Build this touch switch yourself and you'll be able to work it out. Variety of functions explained. Cat K-2628

\$5.50



9 Mosquito Repeller

Do mozzie repellers really work? Build this one and find out. Based on university research, intriguing! You won't hear it - but the mozzies will! Cat K-2629

\$4.95

10 Intercom Amplifier

Use to make the intercom (project 18) or use as a general purpose amplifier. Really handy, good sound output too. Cat K-2630

\$6.50

11 Wireless Mic.

Just like the 'bugs' used in spy movies! Transmits to any standard FM radio in another room or next door, etc. You can really hear it all! Cat K-2631

\$6.50

12 Light Activated Switch

Useful in many security applications around the home etc. If a light goes on, the switch works. You could even use it to trigger a burglar alarm. Cat K-2632

\$5.50

13 Metal/Pipe Locator

Extremely handy for locating pipes, wires, etc in walls before drilling holes. Surprisingly effective for such a simple circuit. Cat K-2633



\$6.50

14 Sound Activated Switch

Picks up sound and triggers. Use as a telephone bell extender without breaking Telecom regulations, or in security applications. Cat K-2634

\$6.95

15 Home/Car Alarm

Very practical! You could use this alarm to protect your home and property! Uses any of the normal alarm triggering devices. Cat K-2635

\$6.50



16 Electronic Siren

Just what you need with the alarm! Also makes a great sound effects circuit - and Fun Way 2 tells you what to do! Cat K-2636

\$4.95



17 LED Level Display

Hook it up to your stereo and it can warn you of dangerous overloads. Looks pretty nifty too - the LEDs light up in time to the music! Cat K-2637

\$8.95

18 Intercom Unit

Build your own intercom & use it around the home. Practical, simple to build with the intercom amplifier above (Project 10). Cat K-2638

\$8.95

19 LED Counter Module

A perfect introduction to the world of integrated circuits. And this useful counter can be used for a huge variety of counting applications - or just for fun! Cat K-2639

\$7.95

20 Short Wave Receiver

You will be able to tune a variety of short wave stations or, with simple modifications, emergency services and amateurs, etc. Easy and fun to build. Cat K-2640

\$6.95



PLEASE NOTE:

These kits do NOT include instructions. All information is published in Fun Way Vol. 2, which is necessary before construction can begin on any kit.

NOTE: Cases shown are not included in basic kits.

FUNWAY 2 GIFT PACK

Here's a great bargain! Over \$28 worth of value for less than \$25! This gift pack has been specially selected for quality and for value.

You get:

- A copy of Fun Way Volume 2.
- A quality Dick Smith Soldering Iron.
- A pack of solder.
- A 9 volt battery.

PLUS: A 'Wireless Microphone' Kit (kit 11 above) - by far our most popular Fun Way kit!

Give a Fun Way 2 Gift Pack - it keeps on giving!

\$24.95

Cat K-2620



VOLUME 3

Vol. 3 KITS!

Here are the exciting Fun Way 3 projects, each of them fully explained in Fun Way Into Electronics, Vol 3. You can't go wrong because all the instructions are right there in the book - along with useful tips on how to really make your projects look snazzy with the labels supplied in the book, how to fit these into zippy boxes ... Your projects will be real winners!

Another 100 pages of fun: that's Fun Way Volume 3. It's the logical progression for those who have worked through Fun Way Vol 1 and 2.

It's for the more advanced hobbyist, because Fun Way Volume 3 projects are all based on Integrated Circuits. There are ten projects in the book, but many of the projects can be built in a number of forms - so there are virtually as many 'individual' projects in Fun Way 3 as there are in the other two books.

And because the Fun Way 3 projects are more complex, they are dealt with in rather more detail. More explanation, more construction details - so you learn much more with Fun Way 3.

But the projects are just as fascinating to build, so they're still FUN! Have a look at the projects at right, and you'll see that there really is a great range - something for everyone!

And they're even more fun to play with when they're built. Like Fun Way Two, Fun Way Three includes deluxe project labels printed on specially coated paper in the back of the book. Use these with Zippy Boxes, and your project looks a million dollars!

Cat B-2610

\$6⁹⁵



3 Cricket



Here's a ton of fun! Hide the cricket: when the lights go out it starts chirping. Turn the lights on or make a noise and it stops. Makes it so hard to find!! It really is infuriating!
Cat K-2663

\$9⁹⁵



6 Mini Colour Organ

Your very own disco colour organ - but ours is battery operated - so it's much safer than mains devices! Connect it to your radio, cassette or stereo for a real lightshow!
Cat K-2664

\$6⁹⁵

9 Binary Bingo



A great school project: it's a fun game - but even more it demonstrates binary numbers very well. And they're the basis of all computers! It seems pretty simple to play ... but try it!
Cat K-2668

\$12⁹⁵



1 Light and Sound

What versatility! It's really 6 projects in one: you just build the form you want - a LED flasher, a mini strobe flasher, police siren, motor boat sound effects, continuity tester and Morse Code practice oscillator.
Cat K-2665

\$6⁹⁵

4 Mini Stereo Amp.



Want an amplifier for your 'walkie' stereo or radio? Don't be tied to 'phones: use this project and listen in comfort! Or you can build this into a mini PA amplifier.
Cat K-2667

\$14⁹⁵



7 Combination Time Lock Switch

You can make a game - or make a real electronic 'lock' with this one. Use it to control an alarm, a door control, etc. You set the combination you want - or change it when you wish. Try and beat this one - if you can!
Cat K-2666

\$8⁹⁵



10 Mini Synth

It's a real beauty, this one: a real 'live' musical synthesiser - and it's live because it uses YOU as the note generator! You get an amazing range of control over the sound.
Cat K-2669

\$12⁹⁵

2 Two Up



Australia's 'national game' has finally been converted to electronics. And you don't have to find any King George pennies! Simulates the throw, the spin and the final result. Come in spinner!
Cat. K-2661

\$6⁹⁵

5 Minder



C'mon, Guvnor - leave the auto alone. That's the Fun Way 3 Minder telling villains that it is looking after the car! It's actually doing much more - makes a great 'lights on' warning and 'door open' warning as well as a pseudo burglar alarm.
Cat K-2660

\$4⁹⁵



8 Li Pokey

You'll have a ball with this one - and you don't risk losing a single cent! A digital project which not only shows how the one armed bandit works - it teaches you how logic circuits work, too.
Cat K-2662

\$14⁹⁵

And when you've finished Fun Way 3???

You're ready to build just about any of the kits from the Dick Smith range - and that's a lot of kits to choose from!

You'll be able to solder properly, identify all components, read circuit diagrams, even use test equipment!

You could even be ready for a career in electronics! And it all starts with Dick Smith's Fun Way Into Electronics.

FUNWAY 3 BONUS PACK

And what value! Buy this kit with two of the most popular kits in the Fun Way Three book ... and we throw in the book **FREE!** Yes, you get both the Electronic Cricket project (known to his friends as Nocturnalis Stridulus Grillidae) plus the Miniature Amplifier project together valued at \$24.90, and as a bonus, the Fun Way Three book itself at no extra charge!!

Fantastic gift idea ... also makes ideal school project material. And this book gives details on how to really dress up your kits for top presentation ... and top marks.

Whether you want to learn more about electronics, or just have fun building interesting circuits, you won't do better than with Fun Way Into Electronics. And with Fun Way 3, you really move up into the electronics 'big time'. This fantastic bonus pack will get you started!

Cat K2670



\$24⁹⁰

TOOLS TOOLS TOOLS TOOLS

Buy now, pay later . . .

Any of our stores will be glad to discuss easy term payments (to finance company approved applicants). Just ask!

Economy Wire Wrapper/Stripper

Sometimes the best tools are the simplest! That's the case with this 'no-frills' wire wrapping and stripping tool: puts professional style wire-wrapping techniques within reach of the average hobbyist. Cat T-3650



\$9⁹⁵

Lug Crimping Tool

For quick, reliable connections crimping beats soldering anytime! Do it easily with this versatile crimping tool - it also cuts and strips wire! Complete in pack with lugs ready to use. Great value - and a must for your workshop! Cat T-3520



ONLY \$3²⁵

Economy Wire Stripper

Large adjustable range. Hardened jaws will last a long, long time. Great value at around half the price of other makes. Cat. T-3630

\$2⁹⁵



Deluxe Wire Stripper

This is a completely automatic wire stripper. Only one hand operation is required to complete stripping operation. The multiple sized head allows a wide range of wire from 1mm to 3.2mm to be stripped. Ideal unit for servicemen, TV technicians, hobbyists etc. Cat T-3620



\$13⁹⁵

Scissor Clamps

Made of stainless steel with screw joint. These scissor clamps are 127mm long so they will reach hard-to-get-at places. They can be used as a third hand for small items as they can be locked on to the article they are holding. Cat T-3690



\$8⁵⁰

Adjustable Blade Trimming Knife

A comfortable hand knife you'd have to pay more for elsewhere! Our low price doesn't affect high quality. Comes complete with 5 surgically sharp carbon steel blades. Cat T-5220



\$3²⁵

Fits Stanley type blades.

HOW CAN WE SELL TOP QUALITY STAINLESS STEEL TOOLS AT SUCH AMAZING PRICES?

It's easy! We import direct!

At last a range of stainless steel tools - without the normal stainless steel price tag! Every professional, every hobbyist needs the best tools to get the best job. But they used to cost a fortune - until Dick Smith Electronics stainless steel tools came on the scene. Amazing value - they'll last far longer than other tools, are ultra precision made and resist corrosion! Carefully chosen types for practical applications.



S/S Transistor Nipper

Ideal for pcb work. Very sharp precision cut with long life cutting edge. 95mm body with spring return. 9mm cutting blades. Cat T-3205

\$8⁹⁵



S/S Mini Flat Nose Plier

Non-serrated working surface to avoid damaging components. Also great as heat sinks because of larger component contact area - and wide nose absorbs lots of heat. 4mm wide blade. Cat T-3325

\$8⁹⁵



S/S Mini Needle Nose Plier

Precise, non-serrated tip and jaw. Ideal for use with semiconductors - the very fine (1mm) tip will reach into places others won't! Cat T-3570

\$8⁹⁵



S/S Mini Long Nose Plier

Heavier duty serrated jaws with high gripping power. Ideal for component removal or mechanical parts manipulation. Jaw 2.75mm wide. Cat T-3565

\$8⁹⁵

ECONOMY TOOL RANGE

Mini Diagonal Cutting Nipper

Drop forged steel construction. Cutting edge tempered and honed. Chrome plated finish with soft plastic handles. Length 100mm. Cat. T-3561



\$5²⁵

Long Nose Plier

This tool has a fine tip and serrated jaw for general use. Built-in cutting edge, chrome plated with insulated handles. Length 125mm, jaws 40mm. Cat. T-3250



\$7⁹⁵

Cutting Nipper/Stripper

This nipper/stripper has sturdy insulated handles and a positive cutting edge. It features two very handy wire stripping holes, one of 1.2mm and the other 1.6mm making it a very versatile tool. Length 125mm, cutting edge 22mm. Cat. T-3220



\$7⁹⁵

Side Cutting Plier

This is a hard working tool for linesmen, electricians and general purpose use. Made of sturdy gunmetal with a polished finish and insulated handles. Has flat serrated jaws with inbuilt cutting edge. They represent excellent value. Length 150mm, jaws 25mm. Cat. T-3270



\$7⁹⁵

The world's most under-rated tool!

Deluxe Pin Vice



Why the world's most under-rated tool? It's only when you start to use one of these that you realise just how handy they are!

The pin vice is a small hand tool that looks a lot like a jeweller's screwdriver - except that it has no blade. Instead (and stored away inside the body) are two double-ended locking collets that can be used to hold just about anything round from 3mm down to virtually nothing.

That could be small drills (fantastic for drilling PCBs!), screwdriver blades (now you don't have to throw broken blades out!) awl points, scribers, reamers, needles and pins, etc etc. Quality made with heavy chrome plating, 5 pieces in set. Cat T-5115

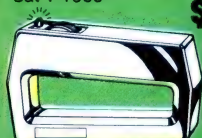
The 'Claytons' drill - the drill you have when you haven't got a drill!

\$8⁹⁵

Super sensitive metal locator

How often have you needed to find a nail in a wall or in a piece of timber, locate a water or gas pipe, reinforcing steel in a building, wires and cable behind plaster?

This little beauty will do just that, and lots of other jobs requiring metal location. Has sensitivity control that can be adjusted from the smallest nail to the largest R.S.J. Indication light comes on in the presence of metal up to 6" or more. (Range depends on size, shape and type of metal). Operates from a single 9V transistor battery. Ideal for plumbers, electricians, builders, handymen etc. Cat Y-1060



\$12⁵⁰
THOUSANDS SOLD!

Screwdrivers

This range of screwdrivers has been chosen because it represents many different types of applications. Depending upon type, you can work on the most delicate of instruments up to motor vehicles. They are made of virtually unbreakable, flame and shock resistant high impact plastic. This applies to the 45, 41, 61, 71, 81 and 82 series of screwdrivers. Code: L-Blade length, D-Blade width, H-Handle length x diameter.

Mini Drivers (Series 45)



This really is a miniature screwdriver! Ideal for small jobs like the magnetic cartridge in your turntable, jewelry etc. Yes they are that small! L-30mm, D-1.6mm, H-25mm x 7mm

Cat. T-4010 FLAT BLADE 55¢
Cat. T-4020 PHILIPS 65¢

Stubby Drivers (Series 41)



These are really great for confined spaces or for a job that needs a bit more leverage than you would get with a slimmer handled screwdriver. L-45mm, D-6.3mm, H-45mm x 30mm

Cat. T-4060 FLAT BLADE \$1.75
Cat. T-4065 PHILIPS \$1.75

Baby Drivers (Series 61)



This range is ideal for light electronic work. D-2.6mm, H-49mm x 11mm

Cat. T-4070 L-50mm 65¢
Cat. T-4075 L-100mm 75¢
Cat. T-4080 L-200mm 85¢

Philips (Series 82)



This series covers all of the most popular Philips screw sizes.

L-75mm, D-3mm, H-54mm x 12mm 75¢
Cat. T-4030
L-100mm, D-4mm, H-75mm x 15mm \$1.10
Cat. T-4040
L-125mm, D-5mm, H-85mm x 18mm \$1.75
Cat. T-4050

TV Alignment Kit



A versatile set of four general purpose tools to cover all shapes & sizes of cores. They are made from tough plastic. Cat. T-4540 \$3.50

Screwdriver Type



Ideal for the handyman & TV technician this plastic screwdriver has a steel spring tip. Suitable for trimmers and mini IF's.

Cat. T-4510 100mm \$1.75
Cat. T-4520 200mm \$1.95

Neon Tester Screwdriver

1,000's SOLD!

\$1.65



Very handy little item to have around: it's a standard flat blade screwdriver, but inside is a neon indicator to warn you of dangerous voltages. Operates from about 90 volts (AC or DC). Ideal for anyone working with mains circuits. A life saver! Cat. T-4005

Popular (Series 71)



This has been voted the most used size. The medium size makes them ideal for general purpose work.

D-4.5mm, H-73mm x 16mm 85¢
Cat. T-4085 L-75mm
Cat. T-4090 L-150mm \$1.10

Heavy Drivers



This series is ideal for the tradesman. The heavy duty makes them useful in the automotive workshop, machine shop etc.

L-75mm, D-5.5mm, H-90 x 19mm \$1.35
Cat. T-4095
L-125mm, D-6mm, H-90mm x 25mm \$1.95
Cat. T-4100

6 Piece Jewellers Set



only \$4.50

These are beautifully made screwdrivers, chrome plated body with a free running knob on the top. The blades are the finest quality nickel chrome molybdenum steel, precision ground. They are presented in a handy transparent moulded case. Sizes range from 0.8mm to 3.8mm.

Cat. T-4350 \$4.50

6 Piece Precision Set



only \$5.50

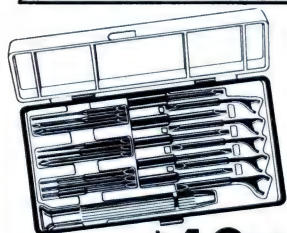
These chrome plated screwdrivers are presented in a plastic storage case. A free running top on each driver gives operator ease of use. The set consists of 4 blade drivers from 1.4mm to 2.9mm and 2 Phillips screwdrivers, No. 0 and No. 1. These are quality screwdrivers at a low price and a very handy set to have around.

Cat. T-4360

20 Piece Metric Utility Set

This set has to be seen to be believed. 20 piece nickel chrome molybdenum steel with chrome plated handle presented in a handy transparent plastic box. The set includes:

3 x blade screwdrivers: 1.5, 2.5, 3.5mm, 2 x Phillips screwdrivers: No. 1 and No. 0, 3 x hex Allen keys: 1.5, 2.0, 2.5mm, 5 x open end spanners: 4.0, 4.5, 5.0, 5.5, 6.0mm, 5 x spintights: 3.0, 3.5, 4.0, 4.5, 5.0mm, tommy bar, 1awl, 1 handle assembly. You will be proud to have this excellent quality set in your tool range. Great value for money!



\$10.95

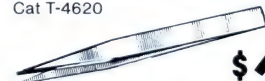
Cat T-4365



TWEEZERS

Pointed

Great for holding small nuts, components and delicate instruments, wires etc. Also great for removing ticks! Fine points. Cat. T-4620



\$1.35

Serrated Jaw

Has flat serrated jaw for positive grip. Cat. T-4630



\$1.20

Allen key set

Allen screws always turn up when you least expect them to! So here's an ideal set for the workshop. 7 gunmetal finish Allen keys in a plastic wallet. Sizes 1.4mm, 1.5mm, 2mm, 2.4mm, 2.5mm, 3mm, 4mm. They are ideal for most European and Japanese equipment that have Allen screws.

Cat. T-5080



\$2.50

IC EXTRACTION TOOL

The perfect way to remove IC's without damage. Works with all DIL packs, no bent pins and no static damage! Operates like a pair of tweezers - with hooks! Cat. T-4650

\$2.95

IC Insertion Tool

How many times have you damaged expensive IC's simply because you couldn't place them properly in the PC board? Well your troubles are over with this superb IC insertion tool. It will handle 14 and 16 pin DIL package IC's with ease and will take the frustration out of IC Insertion. Cat. T-4640



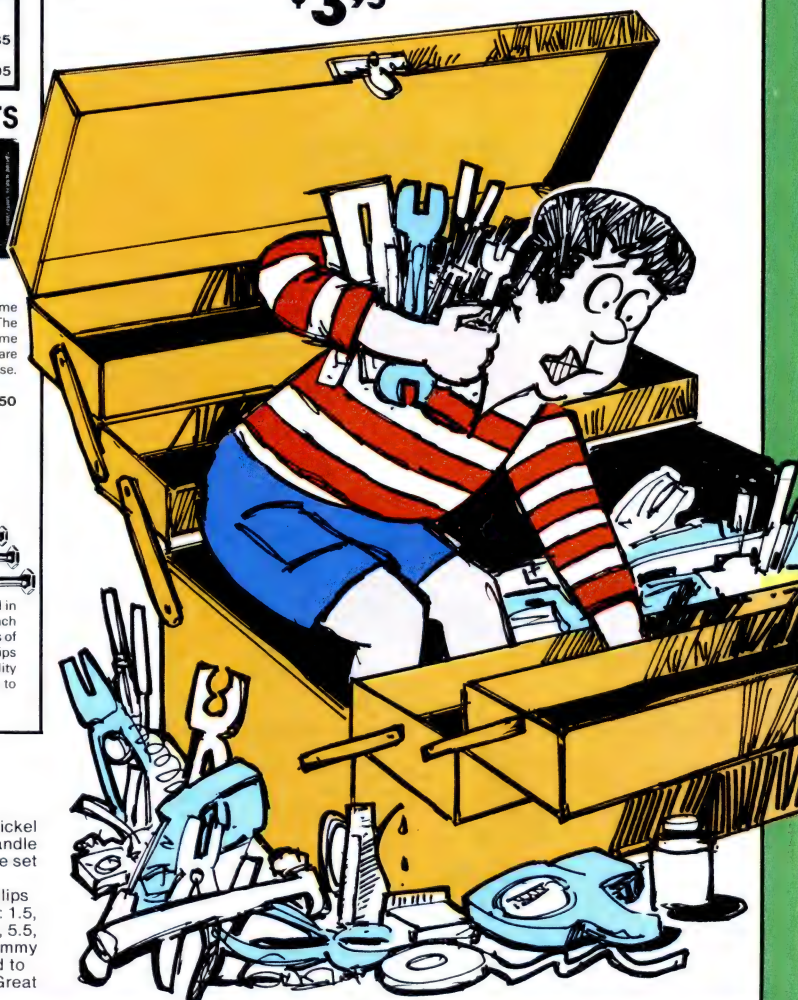
\$6.95

Pearl Catch

For reaching into awkward places. 3 pronged tweezer with syringe action. A must for small nuts, washers etc. Great for servicemen, jewellers, hobbyists, etc. Cat. T-4660



\$3.95



ARLEC SUPERTOOL

What versatility! It drills. It sands. It polishes. It cuts. It engraves. It erases. It mills. It's one of the handiest tools you can have in your arsenal! This fantastic hobby machine is a 10,000 RPM power head which does all of the above with the attachments supplied. And because it operates from low voltage (240V plugpack included!) it's safe. Includes the Supertool and plugpack, 2 milling cutters, 1 wire brush, 1 grinding wheel, 4 high speed steel drills, 5 chuck collets (0 to 4mm), eraser sticks and instructions. Cat T-4754



INCLUDES 240V
PLUG-PACK ADAPTOR

Complete with
ON-OFF switch on the body for convenience.

\$44⁹⁵

Supertool Accessories:

Set 4 PCB Drills

Top quality high speed steel twist drills in all popular pcb sizes: 1.2, 1.0, 0.8, and 0.6mm. Cheaper than buying singly! Cat T-4756 **\$4⁹⁵ set**

Grinding Bits

Shape, sand and grind your projects to perfection. 3 pieces, different shapes. Cat T-4758 **\$6⁷⁵ set**

Cutting Discs

Set of 6 mini cutting discs, with arbor, for cutting metal and plastic. Essential for the serious hobbyist. Cat T-4766 **\$7⁹⁵**

Engraving/Milling Bits

Set of three cutters designed to make short work of any engraving or milling job. Fine and medium hex head plus fine round head. Cat T-4764 **\$4⁹⁵**

Erasers

Make short work of rubbing out! Two different types to cover both ink and pencil.

Set 5 ink Cat T-4760 **\$3²⁰**

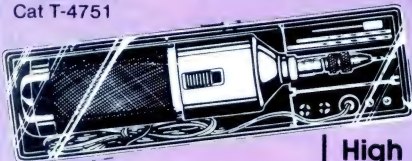
Set 5 pencil Cat T-4762 **\$2⁹⁵**

HIGH SPEED Mini Drill Kit

For the hobbyist, technician, toolmaker, etc... this superb mini drill kit is hard to beat. Very high speed - up to 30,000 rpm (depending on voltage used) with a high torque, it's great for drilling, polishing, grinding, deburring, engraving, routing, buffing, carving, sanding, etc etc. Kit comes complete with four high speed steel twist drills, three collets, grinding bit, spanner and tommy bar, plus DC power cable and plastic case.

- 12-35V DC operated (external)
- Chuck sizes 0.4-1.5mm, 1.7-2.9mm, & 2.8-2.4mm.
- Weight only 400g, size 105mm x 42mm diameter.

Cat T-4751



\$26⁹⁵

Drill Set

High Speed Steel

13 piece drill for all metal, wood, plastics, etc. Quality Australian made set, includes case. Cat T-4801 **\$16⁹⁵**

Drills

MINIATURE HIGH SPEED TWIST DRILLS

Suitable for PC Board work.

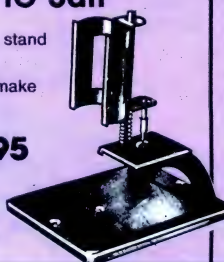
No. 6 (1.0mm) No. 65 (0.8mm)

Cat T-4820 **\$1⁹⁵** Cat T-4825 **\$1⁹⁵**

Stand to Suit

A convenient stand to suit the Mini PC Drill designed to make tasks easier.

\$14⁹⁵



Cat T-4752

20 piece Tool Kit

Cat T-4830

\$19⁹⁵

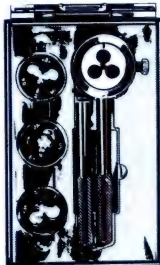


WHAT AN ASSORTMENT!

22 individual pieces in a handy plastic pack (you'll never lose them!):

- 5 open ended spanners 4.0 - 6.0mm
- 2 Phillips Head screwdrivers
- 3 Allen key drivers
- 5 Nut Drivers 3.0 - 5.0mm
- 6 Flat screwdrivers
- 1 tommy bar

Quality Japanese made - a complete set for the hobbyist or technician.



Die Set

6 piece metric die and die stock holder in hinged plastic case. Contains 2mm, 3mm, 4mm and 5mm dies, plus dual handled die stock holder. Complete with instructions. Cat T-4905

\$29⁵⁰

Tap Set

5 piece metric tap set: 'pigeon pair' to above die set. Also contains 2, 3, 4 and 5mm taps and 4 jaw tap holder. Housed in plastic wallet for safe keeping. Cat T-4910



\$13⁵⁰

Piercing (Fret) Saw

An absolute MUST for the modelmaker, hobbyist, etc. Fully adjustable universal type saw frame, complete with 3 blades. NOTE: because it's fully adjustable, you can even use broken saw blades - never be caught again!! Quality Japanese made. Cat T-4965 **\$14²⁵**



Spare Saw Blades

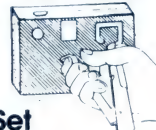
Even though you can use broken blades, you're going to eventually need replacements! Your choice of three special SKS alloy blades in packs of 12:

- Extra Fine: (Type B0) .29mm x 53 teeth/25mm Cat T-4966
- Fine: (Type B2) .34mm x 47 teeth/25mm Cat T-4967
- Medium: (Type B6) .42mm x 32 teeth/25mm Cat T-4968

All **\$2⁷⁵ pack**

Nibbling Tool

A unit that can cut any shape opening in sheet steel to 0.6mm thick or light alloy to 1.5mm. Ideal for plastics too. Easy to use, gives good clean cut without distortion. Follows curved or straight lines with ease. Put one in your tool box today! Cat T-4940



\$16⁵⁰

Hole Punch Set

Ideal chassis basher tool, in fact a necessary tool for anyone who needs a large hole cut through metal. It's easy to use, needs no filing and it will cut a hole without distortion. The complete set includes a 12mm tapered reamer, tommy bar, 5 punches - 16mm, 18mm, 20mm, 25mm, and 30mm. Individual chassis punches bought separately would cost a lot more than the price being charged for the whole set! Will handle steel to 22 gauge and aluminium to 16 gauge. Cat T-4900



\$22⁵⁰

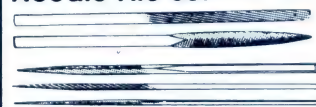
Tapered Reamer

An ideal tool for enlarging holes on thin metal, plastics, wood etc. Great for chassis bashers, hobbyists, servicemen. Made from the highest quality heat treated steel, comes complete with tommy bar. Tapers from 4mm to 22mm. Cat T-4920



\$6⁵⁰

Needle File Set



This handy set of files has five different types, all 185mm in length. The types are round, square, halfmoon, triangular & rectangular. Cat T-4960 **\$12⁵⁰**

Steel Rule

300mm hardened spring steel with deep etched black graduations. Non-rusting, complete with **\$3⁴⁵** plastic sheath. Cat T-5145

PCB TOOLS

Dalo Marking Pen

Essential for precision marking of boards prior to etching. Unique press-to-mark feature enables adequate dye when marking the board. Cat T-5170 **\$2⁶⁵**



PC Marking Kit

INCLUDES SPARE TIP
Contains two colour pens for easy identification plus an eraser. Used direct on pcb foil. Ideal for repairing photoresist, making small one off prototypes. Cat T-5175 **\$7²⁵**



Spot Face Cutter

Removes copper from around holes in Veroboard or PC boards. Cat H-5176 **\$3⁹⁹**

Save dollars on Quality Servicing Aids



MATTE BLACK SPRAY PAINT

A quick drying matte finish spray. Suitable for giving your project that professional finish. Ideal for spraying heat-sinks to increase thermal efficiency. 175 grams. Cat N-1070

\$3.25
GREAT VALUE!



CLEAR ACRYLIC SPRAY

A fine colourless spray that is ideal for the protection of front panels, etched screen print or Letraset lettering. Will moisture proof components, TV aerial terminations etc. 125 gram can. Cat N-1011

IDEAL FOR ARTISTS TOO

CRC 2-26 SPRAY

A moisture removing, cleaning pressure pack. Not only does it clean, but it also leaves a film of protecting silicone that does not dry out. Ideal for pots, switches and contacts. Ideal for loosening stubborn nuts and bolts. Will protect your car from salt and moisture. Use it on the ignition systems to stop frustrations during wet weather starts. 400 gram. Cat N-1060

\$8.75



SPRAY CLEANER

A cleaning and degreasing moisture removing spray. It is non-toxic, non-explosive, non-inflammable. Can be used on rubber or plastics as well. Leaves no residue, suitable for electronic & electrical components, computers, tape recorder heads and mechanisms, clocks and watches, jewellery - in fact even the most delicate equipment. Complete with long range nozzle. 250 grams. Cat N-1051

\$3.25



FLUX REMOVER

At last a can of flux remover. Fantastic for service work, technicians and for cleaning up messy solder jobs! 400g spray can. Cat N-1055

\$8.75

ELECTRONIC CLEANING SOLVENT



A highly efficient, high pressure solvent highly recommended for cleaning tuners, switches, plugs and sockets, commutators, potentiometers, relays, etc. Non-corrosive, low toxicity. Complete with long tube. 300 gram pressure pack can.

Cat. N-1040 **\$5.75**



SPRAY FREEZER

Instantly freezes components down to minus 50 degrees Celsius! Ideal for servicing electrical & electronic equipment with intermittent problems. Also shrinks shafts, bushes, etc; cools components while soldering. Complete with long reach tube. 350g spray can. Cat. N-1056

\$3.25



CIRCUIT LACQUER

A specially formulated spray for the protection of PC boards. This is a solder thru lacquer so boards previously sprayed with PCL-2 can be soldered in service. Pressure pack can 350 grams. Cat. N-1045

\$5.95

SILASTIC

ADHESIVE/SEALANT

Adheres to metals, glass, paint, ceramics, most plastics and wood. Ideal for mending leaks in fish tanks, roof tiles, windscreens etc. General purpose one part silicone cement. 75 g tube. Cat N-1225

\$4.40

SUPER GLUE

No clamping required, no mixing, no mess. Sets in seconds. Has thousands of applications. 3ml tube

\$3.25

Cat. N-1220

IT'S SUPER STRONG!

DSE PVC TAPE

Top quality PVC tape. 18 metres long x 19mm wide x 0.2mm thick. Hundreds of uses. Cat N-1362

\$1.00



HEAT SINK COMPOUND

This heat transfer compound is applied to the base and mounting studs of transistors and diodes. It is also an effective thermal coupler for any heat sink device where efficient cooling is required. Cat N-1205

\$1.85



ELECTROLUBE 2X LUBE PEN

The state of the art electro-mechanical lubricant, packaged in pen form with a pocket clip. The pack has a unique retractable tube system to reach into those inaccessible areas. Non-drying lubricant for use with electronic gear, automotive, office and domestic equipment, etc. Ideal for servicemen. Cat N-1047

\$4.95

Fine products at low, low prices!

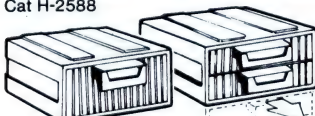
COMPONENT CABINETS & DRAWERS

16 Drawer Cabinet

Components... nuts & bolts... bits and pieces... you'll find them all much more quickly and easily with this superb 16 drawer cabinet. Clear (see-through) drawers makes life even easier. Cabinet size 300 x 180 x 140mm - and you can stack them for even more storage. Each drawer 65 x 137 x 35mm, and includes a divider in each drawer. Cat H-2588



\$22.50



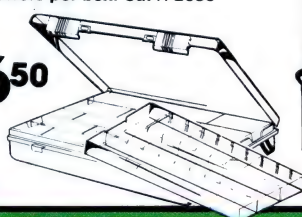
BOTH TYPES: **\$3.25**

Stackable Drawers

Total flexibility: that's this superb drawer system from Dick Smith Electronics. Large (114 x 57 x 130mm) cases containing either one or two drawers. Precision dovetail system means you can stack them both vertically and horizontally. Large handle on each drawer plus index card slot.

One drawer per box: Cat H-2584
Two drawers per box: Cat H-2585

\$26.50



TOOL AND WORK BOXES

Economy Tool Box

Tough polypropylene opening tool box, in brilliant red (very difficult to misplace!) ready to hold tools, test gear, components, even fishing tackle, stuff for your car... you name it! Big 435 x 190 x 180mm, with a five compartment 'lift out' tray inside, revealing a deep storage area. Complete with clasps and provision for a padlock, it's ready to take on the really tough stuff. Famous 'Nylex' brand: made in Australia. Cat H-2601

\$16.95



Deluxe Tool Box

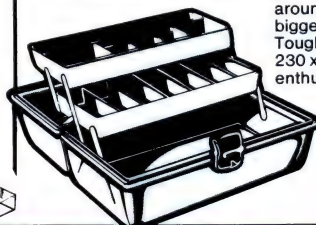
OPENS OUT FOR EASY ACCESS TO ALL COMPARTMENTS!

The deluxe job - with the deluxe features! Even better than the above tool box, this one opens up to reveal two elevated 'pop up' trays with enough compartments for all those bits and pieces you usually leave floating around the box! And underneath is a storage area for bigger tools - even soldering irons and hammers! Tough, impact resistant PVC, measures a large 430 x 230 x 200mm (closed). And it's not just for the electronics enthusiast, either:

- Fishing tackle
- Artists materials
- Sewing materials
- And dozens more!

\$32.95

Cat H-2600



TOOLS TOOLS TOOLS TOOLS

Unbeatable value in soldering irons:

DSE low cost soldering iron.



Looking for top value in a soldering iron? Maybe it's your first iron, and you're totally confused by all the different models. You can't go past the low cost Dick Smith 240V Iron: It's general purpose mains-powered iron that's ideal for all those hobbyist and technician solder jobs. Comfy, tapered handle and nicely balanced iron for hours of fatigue-free use. Stainless steel barrel and 240 volt, 20 watt element is just right for most assembly or repair soldering - and its low, low price means it's ideal for production line use as well as for the hobbyist.

Great beginner's iron, too! Comes ready to use with a small piece of solder for 'tinning' the bit plus full soldering instructions. Cat T-1330

\$10⁹⁵

Solder Stand to Suit

Protect the iron (and more importantly the workbench!) from damage or burns. Spring holder keeps the iron at bay, sponge makes tip cleaning easy. Cat T-1302

\$6⁵⁰

Spare Tips to Suit:

Keep a couple handy - just in case!

Cat T-1301

\$1⁰⁰

Lightweight easy-to-handle



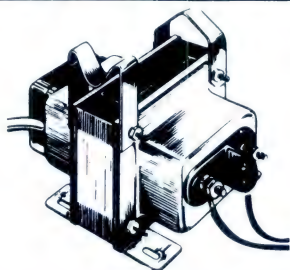
Miniature 12V

Take a look at this superb 12 volt AC or DC soldering iron. And when we say miniature we mean MINIATURE! Not much larger than a pencil in length and not much thicker either. What an ideal iron for those PC board jobs. It is also light and easy to handle that even the most inexperienced soldering fiend will be able to use it. It comes complete with lead and is rated at 6 watts which is ideal for all small component lead soldering. No more are you tied to a lumbering old iron for those delicate jobs - just get the Dick Smith miniature 12V iron. Cat T-1920

INCREDIBLE VALUE \$10⁵⁰

SPARE TIPS TO SUIT

Wedge Copper Tip Cat T-1921 **\$2²⁰** Cone Copper Tip Cat T-1922 **\$2²⁰**



Scope transformer

The ideal transformer for the Scope irons. Mounts on or under the bench. Can be used with any tool requiring around 3-4 volts AC. Completely safe. An earthed insulation shield prevents capacitive coupling and possible voltage leaks. Great for any hobbyist, serviceman etc. Cat T-1692

WHAT A BUY! \$31⁹⁵

SCOPE quality at affordable prices



SUPERSPEED IRON

This is the professional iron for those who are serious about soldering. It has a huge 150 watt capacity with features only found on the more expensive irons. Thumb operated ring on the handle supplies heat in 6 seconds! Delivers the right amount of heat at the right time. You can operate the scope from 30 amps AC or DC or from the special transformer. You can dictate the temperature and wattage to do your job. Stainless steel non-corrosive barrel. Comes complete with spare tip and element. Great for any serviceman or hobbyist!

Cat T-1605

\$33⁹⁵



MINI- SCOPE

Great for servicing PC boards etc. Has all the advantages of bigger irons and it's small size makes it easier to handle. Finger tip control of tip temperature equivalent of irons 10 to 70W. Complete with spare tip and element. Cat T-1660

GREAT VALUE

\$38⁵⁰

Superspeed Spares



Copper Tips (standard)	T-1610	\$1.15
Copper Tips (standard instrument)	T-1612	\$1.15
Stainless barrel	T-1616	\$13.25
Elements (carbon)	T-1618	\$1.15
Bead retaining nut	T-1620	55¢
Bead ceramic	T-1622	35¢
Push rod assembly	T-1624	\$8.55
Return spring	T-1626	\$1.60
Flex lead	T-1628	\$12.95
Bakelite lock nut	T-1630	\$2.80
Brass nut	T-1632	\$2.20
Handle complete	T-1634	\$17.95
Switch ring	T-1636	\$3.10
handle	T-1638	\$10.95
Grommet	T-1640	\$3.20
Lock bush	T-1641	\$2.80

Miniscope Spares



Copper tip	T-1662	\$1.15
Stainless barrel	T-1664	\$10.95
Elements	T-1666	\$1.15
Push rod assembly	T-1668	\$8.95
Insulating bush	T-1670	\$1.40
Switch return spring	T-1672	70¢
Contact lug	T-1674	\$1.30
Switch lever	T-1676	\$5.10
Flex Lead	T-1678	\$13.95
Handle (unslotted half)	T-1680	\$4.30
Handle centre piece slotted	T-1682	\$1.85
Handle brass sleeve	T-1684	\$7.35
Ceramic bead	T-1686	35¢
Bead retaining nut	T-1688	40¢

A professional soldering station at a hobbyists price!

THE DSE Soldering Station

If you're serious about good soldering, there is only one way to do it - with a temperature controlled soldering iron. Until now, temperature controlled irons have been expensive. But Dick Smith Electronics has solved the problem! The Dick Smith Auto Temp offers you the best quality at an unbelievable low price. Features fully variable temperature control (from around 200 degrees to over 500 degrees Celsius) with a temperature meter to show you what's happening. And it's fully approved by the Energy Authority. The station comes complete with lightweight iron holder and cleaning sponge, with a comprehensive instruction manual with full servicing information included - just in case you need it. Cat T-2000

Quality Accessories to suit

Medium Chisel Tip	Cat T-2002	Fine Conical Tip	Cat T-2006
	\$3⁵⁰		\$3⁵⁰
Thick Chisel Tip	Cat T-2004	Replacement Sponge	Cat T-2010
	\$3⁵⁰		\$1⁷⁵

**AND IT'S ONLY
\$79⁰⁰**



TOOLS TOOLS TOOLS TOOLS

HPM 240V Soldering Iron with Stand

Look at this for value! A top quality soldering iron complete with its own stand. Just plug it into the 240V AC mains and it will deliver 25W for fast efficient soldering. A well balanced tool for fine work. The workshop wouldn't be the same without one! Cat T-1800



\$24⁹⁵

Bargain Soldering Accessories

Solder Sucker



A rugged all metal construction solder sucker complete with Teflon tip and a nozzle sweeper as well. Light thumb release mechanism for the removal of solder from the board. Don't pay twice the price - a top quality import from Dick Smith.

Cat T-2560 **\$7⁹⁵**
Spare Teflon Tip to suit Cat T-2565 **\$3⁰⁰**

Desoldering Bulb



Simple and efficient. Simply squeeze bulb, hold up to molten solder and release bulb. Solder is sucked straight up. Use for blow cooling too! Cat T-2580 **\$6⁵⁰**

C/R Puller



Spring loaded 'third hand' for removing components from PC boards when the solder melts. Cat T-2600 **\$4⁹⁵**

Desoldering Braid



Known to one and all as 'Dick Wick', this is a specially treated copper braid that is used to remove solder from the PC board by capillary action. Fast, clean and very efficient. Cut off the used bit of braid and you are ready to start again. Cat N-1682

1-9..... **\$2⁴⁵** 10 or more... **\$2²⁵**

Soldering Aid Set



For the person working with PC boards this is an essential aid. Kit contains: guide fork tool, reamer point and knife point tool, scriber, heatsink clip and stainless steel bristle brush. Can also be used for restringing dials! Cat T-2610 **\$6⁹⁵**

Heatsink Clip Set



Spring loaded, plier grip clips for heat sensitive components and leads. Made of aluminium for high thermal conductivity, 2 types, one straight and one angled, both 75mm long! Cat T-2620 **\$2⁵⁰**

Solder

Top quality corrosion free multicore solder. 1.25mm (18g) 200grams Cat N-1619 **\$6⁵⁰**

0.75mm (22g) 200 grams Cat N-1623 **\$6⁵⁰**

A liberal amount of solder in a hobby pack. 1.25mm (18g) hobby pack **\$4²⁰** Cat N-1638

0.75mm (22g) hobby pack Cat N-1636 **\$4²⁰**

HPM 12V Car Iron

A light, compact tool ideal for those on-the-road or in-the-car jobs. Complete with 4.5 metre cord, crocodile clips and professional soldering instructions. 12V/25W. This iron is easy to handle and will take interchangeable tips in three sizes. Keep one in the boot so a breakdown doesn't spoil your holidays. Cat T-1802



\$12⁵⁰

GREAT VALUE ON ADCOLA IRONS

Adcola 'Duotemp' DR30



Professional quality precision soldering tool! This 240V AC iron gives 21W of heating power. Ideal for the electronics whizz. This iron has TWO temperature modes. For normal work or a special push button boost for fast heating or heavy work. A variety of tips for that specialists job are available. Fantastic value! Cat T-1830

\$32⁵⁰

Adcola 12 Watt S30



Reliable iron for general service or production area and ideal for the hobbyist. High impact orange plastic handle and complete with Triclad 3mm long life tip.

Cat T-1820 **\$27⁵⁰**

TIPS TO SUIT:

Fine: Cat T-1854 **\$4.50**
Medium: Cat T-1850 **\$5.50**

Adcola 16 Watt S50



For those slightly heavier soldering jobs this Adcola is ideal: service work, assembly, etc. Has heavier element for more power (16 watts) and a larger long life Triclad 5mm tip. Thousands of Adcolas are used in electronics every day. Cat T-1825

\$32⁹⁵

TIP TO SUIT Cat T-1856 **\$3⁹⁵**

Solder Stand

Looking for somewhere to put the iron without burning the bench? How about a soldering stand! The iron sits nicely out of the way and lets you get back to work. Safe and convenient with a tip cleaning sponge it can save heaps of burns and frustration. Cat T-1804



\$4⁹⁵

Replacement sponge to suit (also suits T-1800 above) Cat T-1806.... **45¢ ea**

Multi-purpose Stand

A great idea! Leaves both hands free

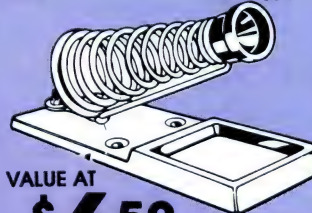


Holds boards or components firmly in rubber faced vice. Angle of vice may be varied widely in three dimensions for greatest accessibility to board. Convenient soldering iron holder also adjustable. Adjustable spool holder for solder & desoldering wick. Ideal for the hobbyist or professional. Leaves both hands free. Cat T-5700

\$32⁵⁰

Soldering Iron Stand

Want somewhere safe to rest your soldering iron? The perfect place is the Dick Smith stand. It is suitable for the Dick Smith iron (Cat T-1330) or many other medium sized irons. It has a very stable cast base with screw holes for attaching to your workbench plus a strong coiled spring in which to place the iron. This protects not only the iron but you as well! Cat T-1302



VALUE AT **\$6⁵⁰**

Complete with tip cleaning sponge

Solder Stand with magnifier!

The helping hand when you need it most: when you have a 'hot stick' in your hand! heavy die-cast base, solder stand, clips for holding PCB, etc - plus a unique magnifying lens for those close assembly jobs. Cat T-5710



\$10⁹⁵

TEST EQUIPMENT TEST EQUIPM



LCD Multimeter Cap/Transistor Checker

The very latest - and the very best - digital multimeter. And multi is the word. Not just the usual voltage, current and resistance ranges - though it's certainly got those - it also checks capacitors (2 ranges, up to a whopping 20uF!) PLUS transistors and diodes. And even more: it's got an audible continuity checker.

Plus other features - such as automatic zero of all ranges, high surge voltage protection, automatic over-range indication, high current measurement (10AC & DC) etc etc - makes this the one digital multimeter you can do just about everything with! Looks like you'll have to check it out!

Cat Q-1500

\$149⁹⁵

- 33 ranges
- High accuracy
- 10M input impedance

RANGES:

DCV: .2, 2, 20, 200, 1000
ACV: .2, 2, 20, 200, 700
DC: 200uA, 2, 20, 200mA, 10A
AC: 2, 20, 200mA, 10A
RES: 200, 2K, 20K, 2M, 20M
CAP: 2, 20, 200nF, 2, 20uF
TRA: hFE 0-1000
DIO: V_f



LCD Multimeter Cap/Checker

Yes! It not only features the normal ranges found on a digital multimeter, it also has five ranges of capacitance checking, two ranges of conductance AND a diode check position! All this in a very accurate (less than 0.25% on DCV) and a high impedance (10Mohm) instrument that is good enough for the designer's test bench, but has a low enough price for the hobbyist. All this plus overload protection, automatic polarity, 2.5cm LCD digits - and measurement to 10A AC & DC.

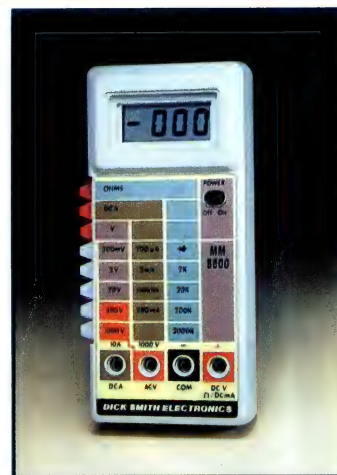
Cat Q-1460

Price Breakthrough! \$99

- Auto polarity
- High Input Impedance (10M)
- Overload protected

RANGES:

DCV: .2, 2, 20, 200, 1kV
ACV: .2, 2, 20, 200, 750V
DC: 200uA, 2, 20, 200mA, 10A
AC: 200uA, 2, 20, 200mA, 10A
RES: 200, 2k, 20k, 200k, 2M, 20M
COND: 2uS, 200nS
CAP: 2, 20, 200nF, 2, 20uF
DIODE TEST: 1mA, -2.8V



Push Button LCD Multimeter

Where else but Dick Smith Electronics could you find a quality digital LCD multimeter at this incredibly low price. Yet no corners have been cut with this precision instrument.

Features push button range selection, large 13mm LCD display, bench stand for easy reading, diode check facility and overload protection. With its 10A DC range, the Q-1444 represents excellent value for money!

Complete with test leads and full instructions.

Cat Q-1444

Value at just \$59⁵⁰

- 16 ranges
- Push-button convenience
- High input impedance

RANGES:

DCV: 2, 2, 20, 200, 1000
ACV: 200, 1000
DC: 200uA, 2, 20, 200mA, 10A
RES: 2k, 20k, 200k, 2000k
DIODE

Multimeter Carry Case

Your multimeter is a pretty big investment! So when you need to carry it with you, protect it with this high quality case. Room for test leads, notes etc inside.

Made for the Q-1140, but also suitable for other multimeters of larger size. Cat Q-1137

\$17⁵⁰

UNIVERSAL TEST LEAD SET

The ultimate test lead set for the professional! Superb quality coiled test leads for ease and convenience. 18 different adaptor probes and plugs. Multi-way test leads makes it suitable to carry out any test you desire. Screw in connector ends make this suitable for any meter. This is the highest quality set around and at this price they're a must!

Cat W-4528

\$16⁵⁰

ECONOMY TEST LEAD SET

Ideal for the hobbyist! This deluxe test lead set will have all you should need for the workshop or toolbox. Screw in any of the 14 adaptors and plugs and you will see that it's truly versatile. Good quality set at a price that makes it one of the best in town.

Cat W-4526

\$7⁹⁵



Multi-meter RF Probe



Extend the useful range of your multimeter way up into the RF range with this neat probe. Frequency response is 150KHz to 30MHz (ref. 500KHz) Comes equipped with 4mm banana plugs for direct multimeter connection. Ideal for use with most multimeters.

Cat Q-1138

\$19⁹⁵

TEST EQUIPMENT TEST EQUIPMENT



Not just a Multimeter Transistor Capacitance Checker too!

Almost a complete test bench in one package – no wonder it's our best selling multimeter! With 100,000 ohm per volt sensitivity and ranges to cover every test set-up, this outstanding meter is all the hobbyist will ever need – and it's just at home on the service bench or in the lab! Measures transistors Ico and Hfe for both NPN and PNP (also good for diode testing) and has an inbuilt transistor oscillator for capacitance measurement.

Cat Q-1140

What a bargain **\$79⁵⁰**

- Fuse PLUS diode protection
 - High Sensitivity – 100k/V
 - 10A AC & DC scales
- RANGES:**
DCV: 0.25, 2.5, 10, 50, 250, 1000 (1000k/V)
ACV: 5, 10, 50, 250, 1000 (10k/V)
DC: 10mA, 2.5mA, 25mA, 500mA, 10A
AC: 10A Decibels: -10 to -62
Resistance: x1, x10, x1k, x10k,
Transistors: Hfe 0-1000 Ico 0-50uA
Capacitance: 50pF-3uF, 0.01uF-50uF



Multimeter & Logic Tester

Virtually two instruments in one! The first analogue multimeter in Australia with built-in Logic Tester! Built-in LEDs give 'HIGH' 'LOW' and 'PULSE' states of logic circuits. 18 voltages, current and resistance ranges, with 20K ohm/v sensitivity DC and 8K ohm/V AC. Shielded movement is unaffected by external magnetic fields. The ideal serviceman's multimeter.

Cat Q-1026

Super low price **\$34⁵⁰**

- Built-in Logic Tester
- 20 Ranges
- Diode & Fuse Protection

RANGES:
DCV: .3, 3, 12, 60, 300, 1200
ACV: 6, 30, 120, 300, 1200
DC: .06, 3, 30, 300mA
RES: x1, x10, x1k, x10k



Multimeter with audible continuity tester

A compact, reliable multimeter with an added bonus: a built-in buzzer for continuity testing! Also has a battery checker PLUS 10A DC range – not normally found on low-priced multimeters! On top of this, you get a high sensitivity (20,000 ohms per volt) meter mirrored scale and large banana plugs for sure contact.

Cat Q-1022

All for just **\$24⁹⁵**

- Diode and fuse protection
- 19 ranges plus dB
- Built-in battery checker plus continuity checker

RANGES:
DCV: 2.5, 10, 50, 250, 1000
ACV: 10, 50, 250, 1000
DC (mA): 5, 50, 500 & 10A
RES: x1, x10, x1k
Batt: 1.5V, 9V
Continuity



Mini Multimeter

A great little multimeter for anyone starting out... or for anyone who is likely to knock their multimeter around a lot. For less than \$15 you get an 11 range, 2000 ohm/volt pocket sized meter that's ideal for most of the general test work we all do. It's rugged and reliable, measures just 92 x 60 x 30mm, and weighs in at only 158g. Throw one in the tool box just in case!

Cat Q-1010

value! **\$13⁵⁰**

- 2000 ohms per volt
- 11 ranges
- Very simple to operate

RANGES:
AC & DC Volts: 10, 50, 250 & 1000
DC Current: 0.5, 100mA
Resistance: x 10, x 1k

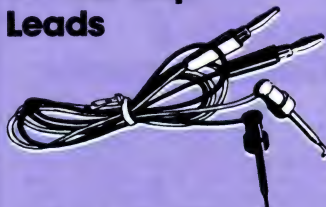
Multimeter Cable Pack



Special 512 strand (yes 512!) very flexible wire that is ideal for test leads or for connection to something that is moving. Very low resistance and only 3mm in diameter. Pack contains 2 metres each of red and black (4 metres total).
Cat. W-4016

\$4⁵⁰

IC Test Clip Leads

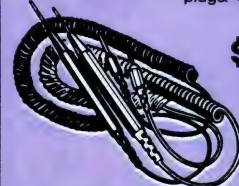


Great for working with IC's (or any other components!) With insulated IC test clips one end, 4mm banana plugs on the other. Leaves hands free while measuring.
Cat W-4509

\$3⁹⁵

Coiled Test Leads Self Retracting

You know the problem of meter leads cluttering up the bench? It won't happen with these leads. They're coiled and return to their coiled shape after being extended. A red & black pair with 1.5mm meter plugs. Cat W-4520



\$4²⁵

1.5mm Plug Test Lead Sets

As supplied with most multimeters (and which are always getting lost!) 90cm long red and black lead with 1.5mm plugs and long insulated probes.
Cat W-4504

\$2⁵⁰

4mm Plug Test Lead Sets

As above but with 4mm banana plugs to suit large diameter multimeter sockets.
Cat W-4508

\$2⁹⁵

INSTRUMENT TEST EQUIPMENT TEST

1GHz Frequency Counter

Great value for a superb 8 digit counter with an enormous range of up to 1GHz! A professional device at an affordable price. The robust, functional design make this unit ideal for the lab, technician, workshop or professional hobbyist. The large bright display and logical layout allow the job to be done quickly and efficiently.

Features include:

- ★ Large, easy to read 8 digit display
- ★ Streamlined, functional design
- ★ 3 gating times - 0.1, 1, & 10 seconds
- ★ 3 frequency ranges - 10MHz, 60MHz & 1GHz
- ★ Sensitivity at 1GHz - 20mV
- ★ Inbuilt 10:1 attenuator
- ★ Inputs - 10Hz to 60Hz at 1M ohm
- 50mHz to 1GHz at 50 ohms

Cat Q-1315



NEW FOR 85

\$499

Logic Probe



A superb time-saving tool for the hobbyist, technician, engineer etc. This outstanding logic probe hooks onto the circuit under test for it's power (5V DC), and you can tell at a glance what the logic level is by which of the three LED's is glowing. It is easily held in one hand - so your other hand is left free! Cat Q-1272

Features:

- Adjustable threshold for DTL/TTL or CMOS circuits
- Two modes of operation: pulse (with time stretching so you don't miss quick pulses!) and mem (holds display until cancelled).
- Low circuit loading (approx 30uA input)
- Tested to 12.6MHz

\$24⁷⁵

Power/SWR Meters



Oskerblock SWR 200

Incredibly popular with the keen amateur. Uses Directional Coupler and Through Line principles for minimum loss, covers 3 to 200MHz (guaranteed!) and suits both 50 & 75 ohm lines. Each instrument is individually calibrated and comes with calibration chart. PL259 Connections.

Specifications:

BAND	SWR METER (MAX. PWR)	POWERMETER (MAX. SCALE)
80	100W	200/2kW
40	50W	200/2kW
20	15W	20/200/2kW
15/10	5W	20/200/2kW
6/2	1W	2/20/200W

Size: 220 x 76 x 110 (mm)

Cat Q-1340

super value! \$139

Battery Lamp and Fuse Tester

Make sure you're not throwing away a fortune! Checks a huge range of 1.5V-9V cells acutely under load: the only way to check them! Even checks NiCads, calculator, watch and photo graphic batteries. Also checks miniature lamps and cartridge fuses for continuity.

Cat Q-1525

\$13⁷⁵

Signal Injector

One of the handiest devices to have in your tool box. Check out both audio and RF circuits (harmonics extend to many MHz) simply and easily. Often the quickest method of fault finding (and one of the cheapest!) Self contained, with probe and earth clip.

Cat Q-1270

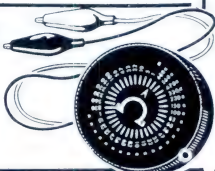
\$14²⁵

Resistance Substitution Wheel

Convenient size with large, easy to read value selection that enables you to select values from 5 ohms to 1M ohm in 36 steps by using most common divisions. Complete with leads and insulated crocodile clips.

Cat Q-1410

\$9⁸⁵



TESTCLIPS & JUMPERS

Mini Alligator Clips

Fully insulated with plastic shroud, easy to solder to; two colours available.

RED Cat W-4550

BLACK Cat W-4552

30¢ each
10 up 25¢

Large Alligator Clips

With red or black insulated grips.

RED Cat W-4554

BLACK Cat W-4556

35¢ each
10 up 30¢

IC Test Clips

Similar to the popular E-Z hooks, but cheaper. Ideal for working with small components, easy to solder to.

RED Cat W-4580

BLACK Cat W-4582

95¢ each
10 up 85¢

16 Pin IC Test Clip

Makes connection of DIL IC easy without the danger of shorting out pins. Use on 8, 14 or 16 pin IC's. Often used as part of a test jig for production testing or service work. Spring loaded.

Cat W-4600

\$4⁹⁵

Hook Probes

With a 'syringe' action and a long shaft; makes connection in tight corners very easy. Knurled grip screw for instant lead attachment, positive action and sure grip for all your test work.

RED Cat W-4589 BLACK Cat W-4590

\$2⁷⁵ each
(10 up \$2.50 each)

Small Jumper Lead Set

TEN PIECE!

Makes breadboarding easy! 10 380mm leads, with alligator clips each end. 5 different colours for easy identification.

Cat W-4570

\$3⁴⁵

IC Jumper Lead Set

A pair of matching red & black leads, one metre long, with matching IC test clip at each end.

Cat W-4572

Great Value!

\$4²⁵

Medium Jumper Lead Set

4 x 750mm leads fitted with large insulated alligator clips at each end to make testing or by-passing easy. Four different colours for instant identification.

Cat W-4571

\$3⁹⁵

Battery Operated



Monitor 4 Geiger Counter

A miniature geiger counter useful for research, education and personal protection in laboratories, hospitals, etc. Sensitive to a broad spectrum range of ionizing radiation including alpha, beta, gamma and x-rays. Switching range - 0.5mR/hr to 50mR/hr. Extra long battery life. Complete with operating manual. This is an accurate scientific instrument at an affordable price. Cat Q1000

\$285⁰⁰

Oskerblock UHF

SWR/Power Meter Now there's a brand new Oskerblock - just for UHF! Checked over 420-490MHz so it's ideal for BOTH UHF CB and Amateur bands. Micro-match strip line type, with 3 power ranges up to 125W and just 0.25dB insertion loss. 50 ohms impedance; PL-259 type connectors.

Cat Q-1342

\$109



Built in Field Strength

Not just the usual power/SWR measurement; it also has built-in field strength facilities for accurate and precise antenna radiation & other RF energy measurement. Fitted with standard SO-239 sockets, can be left permanently in antenna line to warn of problems.

Power: 10W full scale Frequency: To 30MHz SWR: 1:1 to 3:1 and above Impedance: 50 ohms

Cat Q-1350

\$24⁷⁵

A great buy at

EQUIPMENT TEST EQUIPMENT

Wideband RF Signal Generator

Low cost RF signal generator that's ideal for the hobbyist/amateur as well as the serviceman. Great for checking and aligning IF circuits and tuners in AM, FM, and TV sets plus a huge range of general purpose service, troubleshooting and development work.

SPECIFICATIONS:

Frequency range: 100kHz to 150MHz in six overlapping ranges.

Accuracy: $\pm 1.5\%$

RF output: 100mV rms approx (up to 35MHz)

Modulation: 1kHz internal, 50Hz - 20kHz external

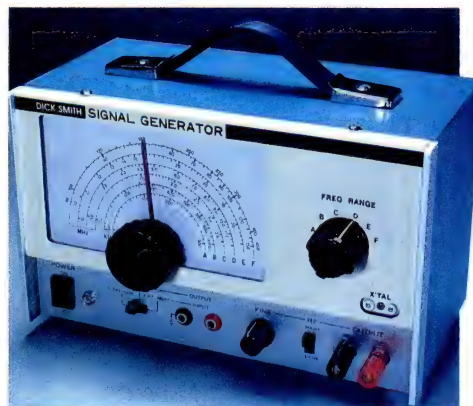
Audio output: 1kHz at 1V rms (fixed)

Crystal Oscillator: 1-15MHz external crystal, FT243 holder

Supply voltage: 240V

Cat Q-1312

\$149



'Pigeon Pair'

AF Signal generator

Square/Sine wave output audio signal generator, essential for work on huge range of circuits. With wide 20Hz - 200kHz output and high accuracy, it is the perfect partner for the above RF generator.

SPECIFICATIONS:

Frequency range: 20Hz-200kHz

Accuracy: $\pm 3\%$ - 2Hz

Output impedance: 600 ohms unbalanced

Output control: High/Low unbal (-200dB) and fine adjuster.

Sine wave output: 20Hz-20kHz, 5V rms max at 1% or less distortion

Square wave o/p: 20Hz, 10V p-p max, 0.5us rise time

Sync: $\pm 3\%$ of oscillator frequency per V rms

Cat Q-1310

amazing value!

\$149



DSE 6.5MHz HOBBYIST'S CRO

An oscilloscope every hobbyist can afford!

Every hobbyist knows how valuable a good oscilloscope is: probably the most useful piece of test gear you can own.

At last, we've been able to obtain a new 6.5MHz CRO, at a bargain price.

Here's what it offers:

- Retrace blanking for a much clearer display
- 10mV per division vertical sensitivity
- 500mV per division horizontal sensitivity
- 10Hz to 100kHz timebase (in 4 ranges)
- Internal or external sync
- And a usable response to beyond 6.5MHz

Ideal for the shack, the work bench, in service work, in the classroom and also in assembly applications. Solid state electronics (apart from the tube!) means fast warm-up and extremely low drift.

Cat Q-1280

\$299



Hand-held RC Oscillator

A really worthwhile addition to your test gear: a hand-held oscillator that's small enough to take anywhere. About the same size as a digital multimeter, it gives you 23 ranges of sine & square waves (switchable) between 20Hz and 1.5kHz, plus a x100 range: 46 settings in all. Continuously variable amplitude and a -20dB attenuator built in gives total control. And you can sync the signal if you wish. Output is standard 600 ohms.

Complete with clip test leads.

Cat Q-1220

\$89⁹⁵

For the Professional:

20MHz DUAL TRACE LAB CRO



All the features asked for in a professional model. But the price is anything but professional!

With response of DC-20MHz (-3dB) and a usable response to well over 50MHz, it's perfect for developmental work as well as general service. And with its unique 'component test' terminals, you can check a huge range of components, both in circuit and out.

Compare the new DSE 20MHz Dual Trace CRO to others on the market. And compare the price.

There's no comparison!

- 5mV/div to 5V/div vertical (10 steps)
- 0.1us/div to 0.2s/div horizontal (uncal 0.5s)
- Modes Ch1, Ch2, Ch1&2 alternate, chopped, added, etc.
- Trigger on all modes (auto, normal or external)
- Sweep ranges 0.1us to 10ms (6 steps)
- 140mm P31 rectangular screen.

Cat Q-1250

\$549

100MHz x1/x10 CRO PROBE

This incredibly versatile probe set will suit virtually any CRO and give you all the features of a probe set you would pay \$\$\$ more for!

Here's what you get:

Probe with inbuilt x1/x10 switch, 1.5m of cable complete with coax type CRO connector and wandering earth lead with alligator clip; PLUS these accessories -

- IC adaptor tip - insulates probe from adjacent IC pins.
- Spring clip - hooks on to keep your hands free
- Insulating shroud - enables you to probe deeply into equipment without fear of shorting.
- BNC adaptor - allows probe to plug into BNC sockets.
- Plastic wallet - to house all the bits for safe keeping.

Cat Q-1245

\$29⁹⁵



Specifications:

Working voltage: 600V Pk (or 600V DC)

Bandwidth: x1 position: DC-10MHz

x10 position: DC-100MHz

Input resistance: x1 1Mohm, x10 10Mohm

Input Capacitance: x1 40pF plus CRO input C

x10 11.5pF if CRO input 30pF

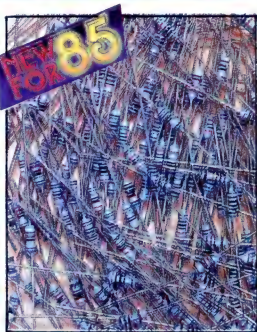
Risetime: x10 position 3.5ns

Compensation range: x10 position 10-60pF

'REF' position: probe grounded via 9M resistor

COMPONENT PACKS

THE SMART WAY TO
BUY YOUR COMPONENTS!



E-24 Metal Film 1% Resistor Pack

New! 300 pieces

Now, for those who need really precision resistors, we've added this superb pack of low noise 1% metal films to our range: in the full E-24 series. Consists of 300 pieces covering 60 values between 11 ohms and 910 kohms; computer chosen for maximum usefulness. Cat R-7020

WORTH OVER \$21!!

\$17⁹⁵



Premium LED Pack

New! 100 premium LEDs

Not the usual mix, these: they're top quality- matched for brightness & colour. Standard 5mm size: at this price you can afford to use premium LEDs on all your projects! You get: sixty red, twenty green, ten yellow and ten orange. That's a hundred premium LEDs for a song! Cat Z-3015

OVER \$18 WORTH!!

\$10⁹⁵



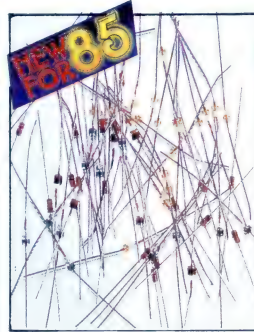
Signal Transistor Pack

New! 100 pieces

A pack of the most-used transistors the hobbyist, technician or design lab can have. Comprises twenty each of DS547, DS548, DS549 NPN types (equiv. BC107, 8 & 9), fifteen DS557 & DS558 (equiv. BC557, 8) and ten BC159 PNP types. Incredibly handy to have around: just in case! And look at the saving... Cat Z-3000

OVER \$15 WORTH!!

\$10⁹⁵



Signal Diode Pack

New! 100 pieces

Another beauty! A selection of the types of diodes we all use for projects - from crystal sets to computers! Contains five OA90, fifteen OA91/DSOA91, five OA95, five OA47 germanium diodes, and a huge seventy (yes, seventy!) 1N914 silicon diodes. Keep a pack in the junk box! Cat Z-3005

WORTH OVER \$19

\$10⁹⁵



Power Diode Pack

New! 57 diodes & SCR's

Just the type of pack you've been waiting for: over fifty of the most used power diodes and SCR's (not useless, rubbish types). You get: 10 each 1N4002, 1N4004, 1N4007 1A diodes, 10 each 1N5404 & 1N5408 3A diodes, two WO4 1.5A 400V bridges, three C106Y1 and two C122E general purpose SCR's. Cat Z-3010.

WORTH OVER \$19

\$10⁹⁵

NEW EXTENDED COMPONENT PACK RANGE!

Save \$\$\$\$ when you buy your components in bulk! Yes, up to 50% and more off normal prices - and that's a saving worth making. We've expanded our range of bargain component packs: because you asked for them. Four new semiconductor packs and a new resistor pack added! Now you can buy most of the common components you need in bulk packs: and save a fortune!

**SAVE UP TO
50%
OR MORE**



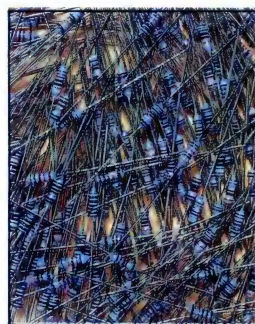
Resistor Pack

300 computer
selected 1/4W types

Ideal for the professional and the hobbyist, 60 values specially chosen by the computer. Quality 5% types - huge savings on normal prices: less than 2¢ each! Cat R-7010

WORTH OVER \$15

\$6⁹⁵



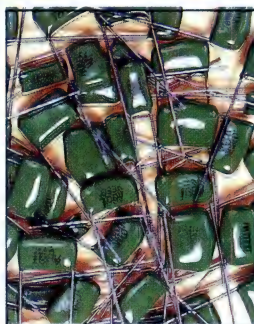
Metal Film Resistor Pack

300 precision 1% 1/4W
E-12 metal film resistors

Our 1% metal film resistors are even better value when bought by the pack! Now there's no excuse not to use metal films in all your projects - especially at this price! Cat R-7015

WORTH OVER \$18

\$13⁹⁵



Greencap Pack

60 Greencaps

No wierd, rubbish values in this pack. Every greencap is as used in a number of circuits. 100 volt rating, too - and the values are selected from .001uF to 0.22uF (60 capacitors in all). Cat R-7040

WORTH OVER \$14

\$9⁹⁵



Electrolytic Pack

55 Electrolytics

55 top quality single ended (pcb mounting) electrolytics. You're sure to find one here you need. Range from 2.2uF to 470uF, voltages from 10 to 25. Cat R-7030

WORTH OVER \$19

\$6⁹⁵



Ceramic Pack

Over 60 Ceramics

Quality ceramic capacitors in a specially selected pack. Voltages from 50V - some as high as 630VW. Save a fortune over one-off prices. Cat R-7050

WORTH OVER \$8

\$4⁹⁵

HARDWARE PACKS

NYLON NUTS AND BOLTS

Precision moulded from '66' white nylon. Fully insulated, will not shake loose, can resist high temperatures and they are corrosion free. These items are hard to get but we have them and they are ideal for transistor and heatsink use. Tough but light.

Description	Qty. pack	Cat. No.	Price per pack
12mm x 4BA cheese head	10	H-1012	95¢
25mm x 4BA cheese head	10	H-1022	95¢
4BA hex nut	12	H-1302	\$1.95
4BA washer	12	H-1452	95¢
12mm x 6BA cheese head	10	H-1032	95¢
25mm x 6BA cheese head	10	H-1042	95¢
6BA hex nut	12	H-1312	\$1.95
6BA washer	12	H-1462	95¢



STEEL NUTS AND BOLTS

1/8" Whitworth round head Zinc plated - just the kind of item that should be in your 'ready' box for future projects.

9mm long	25	H-1052	65¢
12mm long	25	H-1062	65¢
25mm long	20	H-1072	65¢
3mm hex nut	30	H-1322	75¢
3mm shake proof washer	50	H-1472	65¢
3mm metal washer	50	H-1482	65¢

BA TYPE NUTS AND BOLTS

Both brass and steel types in cheesehead.

12mm x 4BA bolt	25	H-1082	75¢
4BA hex nuts (brass)	20	H-1332	90¢
4BA flat washer (steel)	50	H-1488	80¢
4BA shake proof washer	50	H-1486	80¢
12mm x 6BA bolts	25	H-1092	80¢
6BA hex nuts (brass)	25	H-1342	90¢

6BA pack containing 12 of each - 12mm bolts, brass nuts and shakeproof washers. A total of 36 units.

Cat. H-1684 75¢

8BA pack containing 12 of each - 12mm brass bolts, nuts and washers. A total of 36 units.

Cat. H-1682 95¢

SWITCH SCREW

Cross pan-head screws to suit most switches with threaded mounting holes. Two sizes to choose from, each pack has 10 pieces:

3 x 10mm ISO	Cat H-1672	70¢
2 x 5mm JIS	Cat H-1674	70¢

SELF-TAPPING SCREWS

Ideal for projects or as replacements for test screws. These units are Cadmium plated steel.

No. 4 x 12mm: Size 40	25	H-1612	95¢
No. 4 x 6mm: Size 40	25	H-1611	95¢
No. 8 x 12mm: Size 30	25	H-1632	95¢

INSULATED TRANSISTOR MOUNTING KITS

TO-3 TYPE

A pack of four TO-3 transistor mounting kits (mica washer and 2 bushes). Specially selected to give maximum heat transfer.

85¢



Cat H-1917

TO-220 TYPE

Now there's no problem in mounting TO-220 type semis. Pack of 5 insulating washers and bushes.

95¢



Cat H-1916

TO-3 TRANSISTOR INSULATING CAP

A high quality plastic cap that is a press fit over TO-3 transistors. Avoid shorts to chassis (which could blow the transistor) or exposed high collector voltages (which could blow you!) Fit a cap to those TO-3's

PLATED BRASS SPACERS

High quality nickel plated brass spacers. May be stacked for extra length if required.

Description	Qty. pack	Cat No	Price per pack
6mm	12	H-1831	\$1.35
9mm	10	H-1832	\$1.35
12mm	8	H-1833	\$1.35
25mm	6	H-1834	\$1.35

The above units are 4BA (1/8") clearance hole 6mm OD.

The following units are hexagonal 4BA tapped 6mm OD.

9mm	6	H-1842	\$1.35
12mm	6	H-1843	\$1.35
25mm	4	H-1847	\$1.35

INSULATED SPACERS

The ideal spacer for insulating the chassis from your PC board. They come complete with screws.

15mm	5	H-1862	\$1.95
25mm	4	H-1872	\$1.95



CIRCUIT BOARD SUPPORTS

Designed to hold printed circuit boards in position with sufficient clearance above the chassis. They snap into place and can be easily installed or removed by hand. They require a 4mm hole in the PC board and 4.75mm clearance hole in the chassis. Made of nylon.

9mm long H-1981 80¢

RIGHT ANGLE BRACKETS

These brackets are made from mild steel with Cadmium plating. They are ideal for projects where right angle mountings have to be made. They have a 3mm clearance.

12mm H-1895 \$2.95



LED MOUNTING BEZELS - pack of 15

When making up projects that have LED power indication or otherwise why not 'dress' your LEDs for that added professional touch. They work out at less than 7¢ each!

Cat. H-1910 pack of 15 95¢

POT NUT & WASHER PACK

If you're a frustrated project builder searching through thick shagpile carpet for dropped nuts or washers - search no more! Now we can supply a pack of 20 nuts & washers at an incredible price!!! You get imperial size (3/8 hole) plus the new metric sizes (9mm hole). Now there is no excuse not to finish your project!!!

Cat. H-1360.



3AG FUSE CLIPS

These fuse clips are ideal for mounting on PC boards providing flexibility and extremely good value.

Cat H-1700 Pkt. 8 95¢



35¢

Cat H-1918



CABLE JOINERS

How many hours have you spent stripping, soldering and insulating wire? Forget it in the future! These brilliant connectors join wires instantly. All you have to do is lay the two wires to be joined inside the connector and squeeze the connector together with pliers. Can be used in car wiring, trailer wiring, etc. Hundreds of uses. 2 per pack.



Cat. H-6720 Pack of 2 85¢

CORD CLAMP GROMMETS

This is a self-locking grommet that maintains a secure grip on the cable without the use of separate clamps. Both - a grommet and clamp in one! Fits 3 core miniflex or equivalent cable size.

Hole size 12 to 16mm 4 H-1724 95¢



RUBBER FEET SELF-ADHESIVE

Just think - no holes to bore in your chassis, you just stick these handsome black feet on! They have hundreds of uses including being used on store bought equipment.



15 x 5mm small square 4 H-1745 95¢
20 x 8mm large square 4 H-1749 \$1.60

CABLE CLAMPS

These are heavy duty Nylon cable clamps and are a must for terminating power cords and all cables, especially in projects.

Cables up to 5mm diameter	5	H-1964	80¢
Cables up to 6mm diameter	5	H-1965	80¢
Cables up to 8mm diameter	5	H-1966	80¢



CABLE TIES

When making any project that little extra professionalism will make the job look better. These units will handle up to 20mm diameter and down to 2 single wires.

Cat. H-1970 20 in pack \$1.35



GROMMETS

Heavy duty grommets made of black rubber. Essential when cable passes through a metal chassis as they will prevent frayed cables and live chassis.



Hole Size	Bore	No in pack	Cat No	Price
8mm	5.5	10	H-1712	95¢
16mm	6	10	H-1716	95¢
12mm	9	8	H-1719	95¢

RUBBER FEET - SCREW-ON

The conventional rubber feet that have a 3mm hole for screw mounting. Made of black rubber, they can also be cemented on to your project.

Cat. H-1736 8 in a pack 95¢



ASSORTED SPADE LUG PACK

Approximately 100 plated finish spade lugs which are ideal for a huge variety of hobbyist uses: speaker connections, earth terminals, automotive wiring, etc. They can be either crimped or soldered depending on the application. Range of sizes supplied.



\$4.95

Cat H-1994

ASSORTED CRIMP LUG PACK

30 crimp lugs of various types, all with insulation already attached. Can be crimped with either crimping plier or a pair of pliers. 30 lugs and cable joiners in handy pack.

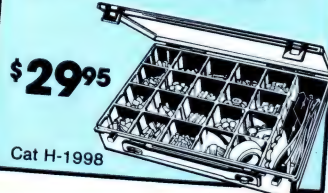


\$3.95

Cat H-1996

THE ULTIMATE CONNECTOR BOX

Hundreds of pieces! Assorted lugs, connectors, fuses, grommets, clips & ties in a sturdy plastic carry case. Over twenty different compartments! Ideal for the handyman, serviceman, auto electrician etc. Perfect for all those little pieces you can never find.

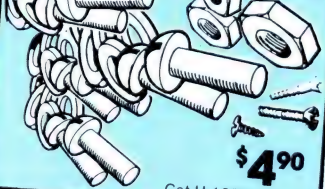


\$29.95

Cat H-1998

ASSORTED METRIC SCREW PACK

Over 200 pieces of the most popular small sizes: M2.5, 3 & 4 nuts and screws - cross, round and countersunk head. Plated finish, ideal to have on hand in the workshop!



\$4.90

Cat H-1680

RESISTORS & POTS

Single Rotary Pots

\$1.05 ea (10 up 95¢)



LINEAR

500	R-6802	50k	R-6809
1k	R-6803	100k	R-6810
10k	R-6806	1M	R-6813
20k	R-6807	2M	R-6814

LOG

1k	R-6817	100k	R-6824
5k	R-6819	500k	R-6826
20k	R-6821	2M	R-6829
50k	R-6823		

Single Rotary Log Switch Pots

\$2.00 ea (10 up \$1.80)



LOG

10k	R-6879
500k	R-6886
1M	R-6888

Dual Rotary Pots

\$2.10 ea (10 up \$1.90)

LINEAR

10k	R-6834
20k	R-6836
100k	R-6840

LOG

10k	R-6849
50k	R-6853

Wire Wound Pots

(Rated at 3 watts)

\$3.25 ea (10 up \$2.95)



LINEAR

5	R-6901	100	R-6909
10	R-6903	200	R-6911
25	R-6905	500	R-6913
50	R-6907		

LOG

1k	R-6915	5k	R-6921
2k	R-6917	7.5k	R-6923
3k	R-6919	10k	R-6925

Mini Vertical Trimpots

40¢ ea (10 up 35¢)



LINEAR

100	R-1929	2k	R-1937
200	R-1931	5k	R-1939
1k	R-1935	20k	R-1943

LOG

50k	R-1945	1M	R-1953
100k	R-1947	2M2	R-1954
500k	R-1951		

Lge Vertical Trimpots

50¢ ea (10 up 45¢)



LINEAR

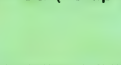
100	R-1956	2k	R-1960
200	R-1957	5k	R-1961
500	R-1958	10k	R-1962
1k	R-1959	20k	R-1963

LOG

50k	R-1964	1M	R-1968
100k	R-1965	2M2	R-1969
200k	R-1966		
500k	R-1967		

Horizontal Trimpots

45¢ ea (10 up 40¢)



LINEAR

100	R-1760	2k	R-1767
200	R-1761	5k	R-1769
500	R-1763	10k	R-1771
1k	R-1765	20k	R-1773

LOG

50k	R-1775	1M	R-1783
100k	R-1777	2M2	R-1784
200k	R-1779		
500k	R-1781		

10 Turn Trimpots

\$2.60 ea (10 up \$2.40)



A multi-turn pot as used in a huge variety of test gear, precision equipment, etc. Very well made. 10 turns from end to end.

1k	R-1900
10k	R-1901
20k	R-1902
50k	R-1903

Replacement pots for transistor radios, etc

Miniature screw mounted

70¢ ea (10 up 65¢)



Cat R-1971

Ideal for use as a replacement type in small radios, etc. Thumbwheel adjust type, screw mounted. Complete with on/off switch, resistance 5k ohms.



Cat R-1974

Miniature Rotary

\$1.05 ea (10 up 90¢)

As used in larger radios, cassettes, etc. With 25mm long fluted shaft and on/off switch. Grab some for the junk box! Also ideal for general use, res. 5K.

Joystick Pot

\$4.95 ea (10 up \$4.40)



Cat R-1976

Assembly complete with 2 x 100K linear pots with paddle movement allowed in all directions. Great for radio control, TV & computer games, music synthesizers, X/Y analogue displays, etc.



Cat R-1980

50k Slider Pot

\$1.05 ea (10 up 90¢)

As used in Playmaster Graphic Equalizer. Quality 50k linear pot, 73mm length, 45m overall travel. Special knobs are available to suit (see knobs page).

Using your 'easy find' resistor table...

Simply follow the 'value' column down on either side until you find the particular value you require, and then run across the column headed by the type of resistor (e.g. metal film, 1W carbon film, etc.). That's the catalogue number of your resistor!

VALUE IN OHMS	1/4W Metal Film	1/4W Carbon Film	1/2W Carbon Film	1W Carbon Film	5W Wire Wound	VALUE IN OHMS
0.1	7¢ each	5¢ each	6¢ each	9¢ each	55¢ each	R-1600
0.47	100 or more	100 or more	100 or more	100 or more	10 or more	R-1601
1.0	6¢ each	4¢ each	4¢ each	7¢ each	40¢ each	
1.2						R-1602
1.5		R-1002	R-1202	R-1402	R-1604	1.0
1.8		R-1004	R-1204	R-1404	R-1606	1.2
2.2		R-1006	R-1206	R-1406	R-1608	1.5
2.7		R-1008	R-1208	R-1408	R-1610	1.8
3.3		R-1010	R-1210	R-1410		2.2
3.9		R-1012	R-1212	R-1412		2.7
4.7						
5.6		R-1014	R-1214	R-1414	R-1614	3.3
6.8		R-1016	R-1216	R-1416		3.9
8.2		R-1018	R-1218	R-1418	R-1618	4.7
10		R-1020	R-1220	R-1420	R-1620	5.6
12		R-1022	R-1222	R-1422	R-1622	6.8
15		R-1024	R-1224	R-1424	R-1624	8.2
18	R-0526	R-1026	R-1226	R-1426	R-1626	10
22	R-0528	R-1028	R-1228	R-1428	R-1628	12
27	R-0530	R-1030	R-1230	R-1430	R-1630	15
33	R-0532	R-1032	R-1232	R-1432	R-1632	18
39	R-0534	R-1034	R-1234	R-1434	R-1634	22
47	R-0536	R-1036	R-1236	R-1436	R-1636	27
56						
68	R-0538	R-1038	R-1238	R-1438	R-1638	33
82	R-0540	R-1040	R-1240	R-1440	R-1640	39
100	R-0542	R-1042	R-1242	R-1442	R-1642	47
120	R-0544	R-1044	R-1244	R-1444	R-1644	56
150	R-0546	R-1046	R-1246	R-1446	R-1646	68
180	R-0548	R-1048	R-1248	R-1448	R-1648	82
220						
270	R-0550	R-1050	R-1250	R-1450	R-1650	100
330	R-0552	R-1052	R-1252	R-1452	R-1652	120
390	R-0554	R-1054	R-1254	R-1454	R-1654	150
470	R-0556	R-1056	R-1256	R-1456	R-1656	180
560	R-0558	R-1058	R-1258	R-1458	R-1658	220
680	R-0560	R-1060	R-1260	R-1460	R-1660	270
820						
1k	R-0562	R-1062	R-1262	R-1462	R-1662	330
1.2k	R-0564	R-1064	R-1264	R-1464	R-1664	390
1.5k	R-0566	R-1066	R-1266	R-1466	R-1666	470
1.8k	R-0568	R-1068	R-1268	R-1468	R-1668	560
2.2k	R-0570	R-1070	R-1270	R-1470	R-1670	680
2.7k	R-0572	R-1072	R-1272	R-1472	R-1672	820
3.3k						
3.9k	R-0574	R-1074	R-1274	R-1474	R-1674	1k
4.7k	R-0576	R-1076	R-1276	R-1476	R-1676	1.2k
5.6k	R-0578	R-1078	R-1278	R-1478	R-1678	1.5k
6.8k	R-0580	R-1080	R-1280	R-1480	R-1680	1.8k
8.2k	R-0582	R-1082	R-1282	R-1482	R-1682	2.2k
10k	R-0584	R-1084	R-1284	R-1484	R-1684	2.7k
12k						
15k	R-0586	R-1086	R-1286	R-1486	R-1686	3.3k
18k	R-0588	R-1088	R-1288	R-1488	R-1688	3.9k
22k	R-0590	R-1090	R-1290	R-1490	R-1689	4.7k
27k	R-0592	R-1092	R-1292	R-1492		5.6k
33k	R-0594	R-1094	R-1294	R-1494		6.8k
39k	R-0596	R-1096	R-1296	R-1496		8.2k
47k						
56k	R-0598	R-1098	R-1298	R-1498		10k
68k	R-0600	R-1100	R-1300	R-1500		12k
82k	R-0602	R-1102	R-1302	R-1502		15k
100k	R-0604	R-1104	R-1304	R-1504		18k
120k	R-0606	R-1106	R-1306	R-1506		22k
150k	R-0608	R-1108	R-1308	R-1508		27k
180k						
220k	R-0612	R-1112	R-1312	R-1512		33k
270k	R-0614	R-1114	R-1314	R-1514		39k
330k	R-0616	R-1116	R-1316	R-1516		47k
390k	R-0618	R-1118	R-1318	R-1518		56k
470k	R-0620	R-1120	R-1320	R-1520		68k
560k	R-0622	R-1122	R-1322	R-1522		82k
680k						
820k	R-0624	R-1124	R-1324	R-1524		100k
1M	R-0626	R-1126	R-1326	R-1526		120k
1.2M	R-0628	R-1128	R-1328	R-1528		150k
1.5M	R-0630	R-1130	R-1330	R-1530		180k
1.8M	R-0632	R-1132	R-1332	R-1532		220k
2.2M	R-0634	R-1134	R-1334	R-1534		270k
2.7M						
3.3M	R-0636	R-1136	R-1336	R-1536		330k
3.9M	R-0638	R-1138	R-1338	R-1538		390k
4.7M	R-0640	R-1140	R-1340	R-1540		470k
5.6M	R-0642	R-1142	R-1342	R-1542		560k
6.8M	R-0644	R-1144	R-1344	R-1544		680k
8.2M	R-0646	R-1146	R-1346	R-1546		820k
10M						
	1M	R-0648	R-1148	R-1548		1M
	1.2M		R-1150	R-1550		1.2M
	1.5M		R-1152	R-1552		1.5M
	1.8M		R-1154	R-1554		1.8M
	2.2M		R-1156	R-1556		2.2M
	2.7M		R-1158	R-1558		2.7M
	3.3M	R-1160	R-1360	R-1560		3.3M
	3.9M	R-1162	R-1362	R-1562		3.9M
	4.7M	R-1164	R-1364	R-1564		4.7M
	5.6M	R-1166	R-1366	R-1566		5.6M
	6.8M	R-1168	R-1368	R-1568		6.8M
	8.2M	R-1170	R-1370	R-1570		8.2M
	10M	R-1172	R-1372	R-1572		10M

PLEASE NOTE: The 100-up price shown for all the resistors is for 100 of the same type and value. Resistors can NOT be mixed to obtain a 100-up price. Refer to our bulk packs for mixed value resistors at huge savings!

Varistors

Two types to choose from:

Used in circuit where transient voltage spikes could cause damage. They absorb the spike with a fast response time (less than 35 nanoseconds) with no follow-on current once the spike is gone.

V82A1

(For 5V circuits)
Cat R-1800

\$2.75 (10 up \$2.50)

V250LA20A

(For 240V circuits)
Cat R-1802

\$2.85 (10 up \$2.60)

CAPACITORS

PREFERRED VALUES:

Most capacitors are supplied in 'preferred values'; however some - particularly electrolytics - are not. (For example, 640 uF where you might expect 560 or 680 uF). If you have a circuit specifying a particular value electrolytic and the one you're supplied with is not the exact value, it is normally quite safe to use it. Electrolytics usually have a very wide tolerance anyway, so if you get stuck you'll probably find a value in either direction will work just as well.

POLYESTER

Often called 'greencaps' because they're very often green in colour. Polyester capacitors are the most widely used of all types, in a huge variety of circuit applications. These polyester types are all rated at 100V or more. See data section for marking codes used.



VAL. IN uF	CAT NO.	PRICE 1-9	PRICE 10 up	VAL. IN uF	CAT NO.	PRICE 1-9	PRICE 10 up
0.001	R-2010	25¢	20¢	0.039	R-2075	25¢	20¢
0.0012	R-2012	25¢	20¢	0.047	R-2080	25¢	20¢
0.0015	R-2015	25¢	20¢				
0.0018	R-2018	25¢	20¢	0.056	R-2085	25¢	20¢
0.0022	R-2020	25¢	20¢	0.068	R-2090	25¢	20¢
0.0027	R-2027	25¢	20¢	0.082	R-2095	25¢	20¢
0.0033	R-2033	25¢	20¢	0.1	R-2100	28¢	23¢
0.0039	R-2030	25¢	20¢	0.12	R-2102	28¢	23¢
				0.15	R-2105	28¢	23¢
0.0047	R-2035	25¢	20¢	0.18	R-2107	28¢	23¢
0.0056	R-2040	25¢	20¢				
0.0068	R-2045	25¢	20¢	0.22	R-2110	28¢	23¢
0.0082	R-2050	25¢	20¢	0.27	R-2115	35¢	30¢
0.01	R-2055	25¢	20¢	0.33	R-2120	35¢	30¢
0.012	R-2057	25¢	20¢	0.39	R-2125	45¢	40¢
				0.47	R-2130	55¢	45¢
0.015	R-2060	25¢	20¢				
0.018	R-2062	25¢	20¢	1.0	R-2135	\$1.25	\$1.15
0.022	R-2065	25¢	20¢	2.0	R-2140	\$1.50	\$1.25
0.027	R-2067	25¢	20¢	3.3	R-2145	\$2.50	\$1.20
0.033	R-2070	25¢	20¢				

HIGH VOLTAGE POLYESTER

Similar to above range, but offering a very high voltage rating: 630 volts! Ideal replacements for most capacitors used in valve circuits.



VAL. IN uF	CAT NO.	\$ 1-9	\$ 10 up	VAL. IN uF	CAT NO.	\$ 1-9	\$ 10 up
0.01	R-2160	30¢	25¢	0.1	R-2170	60¢	55¢
0.022	R-2162	35¢	30¢	0.22	R-2172	95¢	90¢
0.033	R-2164	45¢	40¢	0.33	R-2174	\$1.05	\$1.00
0.047	R-2166	45¢	40¢	0.47	R-2176	\$1.15	\$1.05

POLYSTYRENE

With a low temperature coefficient and very high voltage rating, polystyrene capacitors are ideal for use where stability and voltage rating is important.



VAL. IN uF	CAT NO.	VAL. IN uF	CAT NO.	VAL. IN uF	CAT NO.
33pF	R-2807	330pF	R-2831	150pF	R-2823
39pF	R-2809	390pF	R-2833	180pF	R-2825
47pF	R-2811	470pF	R-2835	560pF	R-2837
56pF	R-2813	82pF	R-2817	680pF	R-2839
68pF	R-2815	100pF	R-2819	820pF	R-2841
220pF	R-2827	120pF	R-2821	1000pF	R-2843
270pF	R-2829				

All polystyrene one price: 1-9 45¢ 10 up 40¢

HIGH VOLTAGE POLYCARBONATE

Specifically intended for mains and other suppression applications, these capacitors are rated at 250 volts AC continuous.



VALUE	VOLTAGE	CAT NO.	\$ 1-9	\$ 10 up
0.001uF	250V AC	R-2740	80¢	75¢
0.01uF	250V AC	R-2730	70¢	65¢
0.1uF	250V AC	R-2720	\$1.30	\$1.20

VARIABLE TUNING GANG

60pF to 160pF miniature solid dielectric tuning capacitor suitable for replacement in many transistor radios. Ideal for new projects too.

Cat R-2970 1-9 \$1.95 ea 10 up \$1.75 ea



TAG TANTALUMS

Resin dipped electrolytics which use a tantalum dielectric, giving a very low leakage but a high capacitance for the size of the package. See data section for marking codes.



VAL. IN uF	VOLT-AGE	CAT NO.	\$ 1-9	\$ 10 up	VAL. IN uF	VOLT-AGE	CAT NO.	\$ 1-9	\$ 10 up
0.1	35	R-4700	65¢	60¢	4.7	35	R-4740	75¢	70¢
0.22	35	R-4705	65¢	60¢	6.8	35	R-4745	75¢	70¢
0.33	35	R-4710	65¢	60¢	10	25	R-4750	75¢	70¢
0.47	35	R-4715	65¢	60¢	15	16	R-4755	75¢	70¢
1	35	R-4720	65¢	60¢	22	16	R-4760	75¢	70¢
1.5	35	R-4725	65¢	60¢	33	10	R-4765	75¢	70¢
2.2	35	R-4730	65¢	60¢	47	6.3	R-4770	75¢	70¢
3.3	35	R-4735	65¢	60¢	100	3	R-4775	75¢	70¢

CERAMICS

Use ceramics when low inductance is important; for example, in many RF circuits. They offer a huge range of values and are all rated at 50 volts or higher.



VAL. IN uF	CAT NO.	VAL. IN uF	CAT NO.	VAL. IN uF	CAT NO.
1pF	R-2215	27pF	R-2245	470pF	R-2299
1.5pF	R-2217	33pF	R-2247	560pF	R-2301
2.2pF	R-2219	39pF	R-2249	680pF	R-2303
2.7pF	R-2221	47pF	R-2251	820pF	R-2305
3.3pF	R-2223	56pF	R-2253	0.001uF	R-2307
3.9pF	R-2225	68pF	R-2257	0.002uF	R-2309
4.7pF	R-2227	82pF	R-2259	0.003uF	R-2311
5.6pF	R-2229	100pF	R-2285	0.004uF	R-2313
6.8pF	R-2231	120pF	R-2287	0.005uF	R-2315
8.2pF	R-2233	150pF	R-2289	0.006uF	R-2317
10pF	R-2235	180pF	R-2291	0.008uF	R-2319
12pF	R-2237	220pF	R-2293	0.01uF	R-2321
15pF	R-2239	270pF	R-2295	0.02uF	R-2323
18pF	R-2241	330pF	R-2296	0.03uF	R-2325
22pF	R-2243	390pF	R-2297	0.04uF	R-2327

All one price 1-9 15¢ ea. 10 or more 12¢ ea.

SPECIAL CERAMICS

60V rating
Special large capacitance ceramics for special applications

0.1 uF	R-2360	1-9	22¢	10 up	20¢
0.22 uF	R-2370	1-9	22¢	10 up	20¢

High voltage ceramic (rated at 3kV) for mains suppression, etc.

0.01uF	R-2400	1-9	\$1.30	10 up	\$1.20
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CERAMIC FEEDTHROUGHS

Ideal for bypassing DC supply lines, RF amplifiers, noise suppression on motors, etc.



0.0012uF	350V	R-2850	1-9	45¢	10 up	40¢
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HIGH DISCHARGE (STROBE) CAPACITOR

Used in circuits such as photographic strobes or flashes where heavy discharge currents occur. Rated at 250 volts AC with discharge resistor built in.

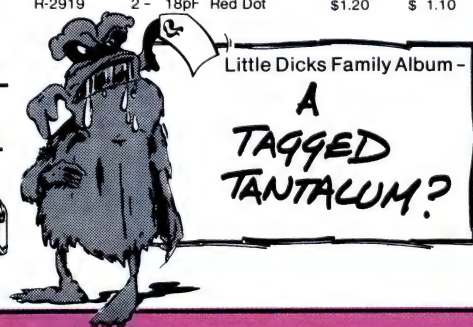


CAT NO.	RANGE	MARKING	PRICE EA.	10 UP
R-2855	6.5uF	250V AC	\$4.60 each	\$4.20

TRIMMER CAPACITORS

Three new film dielectric trimmers - ideal for all projects requiring capacitance adjustment.

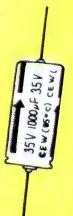
CAT NO.	RANGE	MARKING	PRICE EA.	10 UP
R-2915	5 - 70pF	Yellow	\$1.00	90¢
R-2917	10 - 100pF	Red	\$1.00	90¢
R-2919	2 - 18pF	Red Dot	\$1.20	\$1.10



ELECTROLYTICS

Electrolytics come in a range of different shapes and sizes but (with the exception of the bipolar type below) they have one thing in common: they are polarised and must be connected into circuit correctly. As you will note, very large capacitances are possible with electrolytic types.

VAL. IN uF	VOLT-AGE	CAT NO.	\$ 1-9	\$ 10 up
0.47	63	R-4010	30¢	25¢
1.0	350	R-4015	30¢	25¢
2.2	63	R-4020	30¢	25¢
3.3	25	R-4025	30¢	25¢
4.7	25	R-4030	30¢	25¢
4.7	63	R-4035	30¢	25¢
4.7	500	R-4045	60¢	55¢
6.8	40	R-4047	25¢	20¢
10	16	R-4055	30¢	25¢
10	25	R-4060	30¢	25¢
10	63	R-4065	30¢	25¢
25	25	R-4085	30¢	25¢
25	63	R-4090	35¢	33¢
33	16	R-4095	30¢	25¢
47	16	R-4105	30¢	25¢
47	25	R-4110	35¢	30¢
47	63	R-4115	40¢	35¢
47	350	R-4120	\$1.30	\$1.10
100	10	R-4125	40¢	35¢
100	25	R-4130	40¢	35¢
100	63	R-4135	50¢	45¢
100	350	R-4140	\$2.80	\$2.50
220	16	R-4145	55¢	50¢
220	25	R-4150	90¢	80¢
220	63	R-4155	\$1.00	90¢
470	16	R-4160	80¢	75¢
470	63	R-4165	\$1.30	\$1.00
680	40	R-4230	45¢	40¢
1000	16	R-4175	95¢	85¢
1000	25	R-4180	\$1.10	\$1.00
1000	35	R-4185	\$1.30	\$1.20
1000	63	R-4190	\$1.95	\$1.85
2500	16	R-4195	\$1.20	\$1.10
2500	25	R-4200	\$1.70	\$1.50
2500	35	R-4205	\$2.15	\$2.00
2500	50	R-4210	\$2.50	\$2.30
4700	35	R-4215	\$3.00	\$2.80



SINGLE ENDED (PCB MOUNTING)

47	50	R-4290	22¢	20¢
1.0	50	R-4295	22¢	20¢
2.2	25	R-4300	22¢	20¢
4.7	25	R-4310	22¢	20¢
4.7	100	R-4040	28¢	25¢
10	25	R-4315	24¢	22¢
16	22	R-4318	24¢	20¢
25	25	R-4320	24¢	22¢
33	10	R-4330	24¢	22¢
33	35	R-4340	28¢	23¢
47	25	R-4350	28¢	23¢
100	16	R-4360	28¢	23¢
100	25	R-4370	28¢	23¢
220	16	R-4380	60¢	55¢
220	25	R-4390	70¢	65¢
330	10	R-4397	50¢	45¢
330	25	R-4400	75¢	70¢
470	16	R-4410	63¢	55¢
470	10	R-4407	70¢	65¢
470	25	R-4420	75¢	65¢
640	16	R-4430	75¢	65¢
1000	50	R-4457	\$1.45	\$1.35
1000	16	R-4440	55¢	45¢
1000	25	R-4450	80¢	70¢
2200	25	R-4460	\$1.30	\$1.10
6800	10	R-4470	\$1.30	\$1.10
10000	10	R-4480	\$1.95	\$1.75
10000	40	R-4483	\$7.95	\$7.25



METAL CAN TYPE

VAL. IN uF	VOLT-AGE	CAT NO.	\$ 1-9	\$ 10 up
2200	40	R-4580	\$1.10	\$1.00
4000	75	R-4560	\$1.95	\$1.95
5600	40	R-4570	\$5.40	\$4.90



BI-POLAR ELECTROLYTICS

These electrolytics are specially made not to be polarised. They are designed for use where the voltage polarity across them changes - for example, in speaker cross-overs. They have a 50 volt rating.

VAL. IN uF	CAT NO.	\$ 1-9	\$ 10 up
2.2	R-4600	55¢	50¢
3.3	R-4605	55¢	50¢
4.7	R-4610	55¢	50¢
6.8	R-4620	55¢	50¢
10	R-4630	55¢	50¢
22	R-4640	55¢	50¢



SEMICONDUCTORS SEMICO

SILICON TRANSISTORS

Type No	Cat No	Price Ea	Price 10 up	Pol	Vce	Ic (mA)	P(tot) (mW)	Ft (MHz)
BC159	Z-1359	.17	.14	PNP	20	100	300	150
BC327	Z-2240	.35	.30	PNP	45	800	800	100
BC328	Z-2242	.30	.25	PNP	25	800	800	100
BC337	Z-2190	.35	.30	NPN	45	800	800	200
BC338	Z-2252	.30	.25	NPN	25	800	800	200
BC107	(See DS547)							
BC108	(See DS548)							
BC109	(See BC549)							
BC179	(See BC159)							
BC549C	Z-1329	.37	.33	NPN	30	100	500	300
BC639	Z-1388	.50	.45	NPN	80	1A	1W	130
BC640	Z-1389	.50	.45	PNP	80	1A	1W	50
BCY71	Z-1241	\$1.20	\$1.00	PNP	45	200	350	200
BD139	Z-1443	.65	.55	NPN	60	1A	8W	250
BD140	Z-1444	.65	.55	PNP	80	1A	8W	75
BD262	(See BD682)							
BD263	(See BD681)							
BD681	Z-1462	\$1.90	\$1.70	NPN	100	4A	40W	1
BD682	Z-1460	\$1.90	\$1.70	PNP	100	4A	40W	1
BUX80	Z-2150	\$6.95	\$6.30	NPN	400	10A	100W	8
BF115	Z-1560	.95	.75	NPN	30	30	145	230
BF173	Z-1590	\$1.25	\$1.00	NPN	25	25	230	550
BF180	Z-1602	\$1.30	\$1.10	NPN	20	20	150	675
BF184	Z-1604	\$1.25	\$1.00	NPN	20	30	145	300
BF199	(See BF173)							
BF469	Z-1635	\$1.20	\$1.00					
BF470	Z-1636	\$1.20	\$1.00					
BFR91	Z-1691	\$3.25	\$3.00	NPN	12	36	180	5GHz
DS547	Z-1300	.17	.14	NPN	45	100	500	300
DS548	Z-1308	.17	.14	NPN	30	100	500	300
DS549	Z-1319	.17	.14	NPN	30	100	500	300
DS557	Z-1340	.17	.14	PNP	45	100	300	150
DS558	Z-1348	.17	.14	PNP	25	100	300	150
MJ2955	Z-1800	\$2.30	\$2.00	PNP	60	15A	115W	4
MJ15003	Z-1808	\$6.95	\$6.30	NPN	140	20A	250W	2
MJ15004	Z-1810	\$6.95	\$6.30	PNP	140	20A	250W	2
MJE340	Z-2010	\$1.20	\$1.10	NPN	300	500	20W	-
MJE2955	Z-2005	\$2.25	\$1.95	PNP	60	10A	75W	2
MJE3055	Z-2008	\$2.25	\$1.95	NPN	60	10A	75W	2
MU9610	(See 2N3019)							
MRF629	Z-2509	\$16.45	\$15.00	NPN	16	400	5W	500
PN3563	Z-2180	.30	.25	NPN	12	50	200	600
PN3642	Z-2250	.50	.45	NPN	45	500	350	250
PN3645	Z-2256	.30	.25	PNP	60	500	300	200
PN4250	Z-2320	.45	.40	PNP	40	10	200	50
PN4258	Z-2326	.45	.40	PNP	12	50	200	700
TIP31B	Z-2020	.95	.90	NPN	80	3A	40W	3
TIP32B	Z-2024	\$1.20	\$1.10	PNP	80	3A	40W	3
TT797	(See 2N4030)							
TT800	(See 2N4030)							
TT801	(See 2N3019)							
2SC1096	Z-2500	\$1.95	\$1.65	NPN	30		10W	60
2SC1674	Z-6005	\$1.05	.95	NPN	20		250	600
2SC2166	Z-2501	\$6.50	\$6.20	NPN	30		20W	150
2SC1969	Z-2502	\$6.50	\$6.20	NPN	75	4A	1.5W	
2N2222A	Z-2069	.95	.90	NPN	40	800	500	300
2N3019	Z-2068	\$1.10	.95	NPN	30	1A	800	100
2N3053	Z-2130	\$1.00	.95	NPN	40	700	2.86	100
2N3055	Z-1804	\$2.30	\$2.00	NPN	60	15A	115W	.08
2N3904N	Z-2070	.20	.18	PNP	40	200	310	-
2N3905	Z-2244	.25	.20	PNP	40	200	310	200
2N3905A	Z-2071	.20	.18	PNP	40	200	310	200
2N4030	Z-2064	\$1.50	\$1.40	PNP	60	1A	800	100
2N4292	(See PN3019)							

FIELD EFFECT TRANSISTORS

Type No	Cat No	Price Ea	Price 10 up	Pol/Const.	Vgss V @ Ig (uA)	Min	VGs(off) Max @ Vds
MPF102	Z-1832	.95	.90	NCH J	25 10	0.5	8 15
MPF105	Z-1838	.95	.90	NCH J	25 1	-	8 15
MPF106	Z-1840	\$1.00	.95	NCH J	25 1	0.5	4 15
MFE131	Z-1848	\$1.80	\$1.70	NCH MOS	20 -	-	4 15
2N3460	Z-2072	\$2.60	\$2.45	NCH J	40 -	0.5	6 15
2N4342	Z-1833	\$1.50	\$1.40	PCH J	25 10	-	5 10
2N5245	Z-2335	\$1.10	\$1.05	NCH J	30 1	1	6 15
2N5484	Z-2340	.85	.80	NCH J	25 1	0.3	3 15
2N5486	Z-2073	.70	.65	NCH J	25 -	2	6 15
PN4360	Z-2074	.85	.80	PCH J	40 -	0.5	6 15

POWER MOSFETS

Type No	Cat No	Price Ea	Price 10 up	Pol/constr.	Vdss (min) V @ Id	Id (max) A
2SJ48	Z-1816	\$7.50	\$6.75	PCH MOS	-120 -10mA	-7
2SK134	Z-1815	\$6.95	\$6.30	NCH MOS	140 10mA	7

GERMANIUM TRANSISTORS

Type No	Cat No	Price Ea	Price 10 up	Pol	Vce	Ic (mA)	P(tot) (mW)	Ft (MHz)
AC126	Z-1054	\$1.50	\$1.40	PNP	12	100	500	1.7
AC127	Z-1062	\$1.50	\$1.40	NPN	16	500	340	1.5
AC128	Z-1064	\$1.50	\$1.40	PNP	16	1A	1W	1
AC187	Z-1080	\$1.45	\$1.35	NPN	15	1A	1W	1
AC188	Z-1082	\$1.45	\$1.35	PNP	15	1A	220	1
AD161	Z-1110	\$1.95	\$1.75	NPN	20	3A	4W	.02
AD162	Z-1112	\$1.95	\$1.75	PNP	20	3A	6W	.015
OC26	Z-1930	\$4.35	\$3.95	PNP	30	3.5A	32W	.3
OC44N	Z-1932	\$1.60	\$1.50	PNP	5	10	85	7.5
OC71	Z-1941	\$1.35	\$1.15	PNP	10	50	125	.6

ZENER DIODES

Type	Cat No	Price Ea	Price 10 up	Voltage	Power
IN746	Z-3401	.28	.25	3.3V	400mW
IN750	Z-3403	.28	.25	4.7V	400mW
IN751	Z-3405	.28	.25	5.1V	400mW
IN752	Z-3407	.28	.25	5.6V	400mW
IN753	Z-3409	.28	.25	6.2V	400mW
IN957	Z-3411	.28	.25	6.8V	400mW
IN961	Z-3413	.28	.25	10V	400mW
IN963	Z-3415	.28	.25	12V	400mW
IN965	Z-3417	.28	.25	15V	400mW
IN967	Z-3419	.28	.25	18V	400mW
IN4728	Z-3515	.39	.35	3.3V	1W
IN4729	Z-3517	.39	.35	3.6V	1W
IN4730	Z-3519	.39	.35	3.9V	1W
IN4731	Z-3521	.39	.35	4.3V	1W
IN4732	Z-3523	.39	.35	4.7V	1W
IN4733	Z-3525	.39	.35	5.1V	1W
IN4734	Z-3527	.39	.35	5.6V	1W
IN4735	Z-3529	.39	.35	6.2V	1W
IN4736	Z-3531	.39	.35	6.8V	1W
IN4737	Z-3533	.39	.35	7.5V	1W
IN4738	Z-3535	.39	.35	8.2V	1W
IN4739	Z-3537	.39	.35	9.1V	1W
IN4740	Z-3539	.39	.35	10V	1W
IN4741	Z-3541	.39	.35	11V	1W
IN4742	Z-3543	.39	.35	12V	1W
IN4743	Z-3545	.39	.35	13V	1W
IN4744	Z-3547	.39	.35	15V	1W
IN4745	Z-3549	.39	.35	16V	1W
IN4746	Z-3551	.39	.35	18V	1W
IN4747	Z-3553	.39	.35	20V	1W
IN4748	Z-3555	.39	.35	22V	1W
IN4749	Z-3557	.39	.35	24V	1W
IN4750	Z-3559	.39	.35	27V	1W
IN4751	Z-3561	.39	.35	30V	1W
IN4752	Z-3563	.39	.35	33V	1W

TRANSISTOR SOCKETS

Type	Cat No	Price Ea	Price 10 up
TO-5 (suit 2N3053 etc)	P-4015	.75	.70
TO-3 (suit 2N3055 etc)	P-4023	.60	.55

TRANSMITTING VALVES

Type No	Cat No	Price Ea
6146B	D-7202	\$27.50
6JS6C	D-7204	\$20.00

572B valves as used in FL-2100Z linear available from our service department.

LOOKING FOR SEMICONDUCTOR DATA?

See pages 76 & 77 for Books or our data section

DUCTORS SEMICONDUCTORS

THYRISTORS

SCR'S

Economy Plastic Pack

Type	Vdrrm	It(A) rms	Use	Cat No	Price Ea	Price 10 up
C103B	200	0.8	Small Current	Z-4310	.95	.90
C106Y1	30	4	Sensitive Gate	Z-4315	.95	.90
C106D	400	4	Sensitive Gate	Z-4320	\$1.65	\$1.55
C122E	500	8	AC Switch	Z-4332	\$1.75	\$1.65
(BT151, TIC126E)						

TO-48 Stud Packs

C164D	400	16	High Current	Z-4354	\$4.70	\$4.50
C168D	800	16	High Current	Z-4358	\$7.50	\$7.00

TRIACS

Economy plastic pack

SC141D	400	6*	AC Switch	Z-4510	\$1.60	\$1.50
(*May be Q4006L4 or 2N6343, both 8A)						
SC151D	400	15†	AC Switch	Z-4520	\$3.25	\$3.00
(†May be BT139/500 - 500V, 16A)						

TRIGGERING DEVICES

Type No	Device Type/Description	Cat No	Price Ea	Price 10 up
ST4	Assymetrical trigger diode - suitable trigger for SC141/151	Z-4740	\$1.00	.95
MOC3021	Opto-coupled triac driver	Z-4516	\$2.95	\$2.75

UNIUNCTIONS

Type	Device Type/Description	Cat No	Price Ea	Price 10 up
2N6027	Programmable unijunction (sim. D13T1)	Z-1780	.85	.70
DS2646	Unijunction (similar 2N2646)	Z-1786	\$1.30	\$1.20

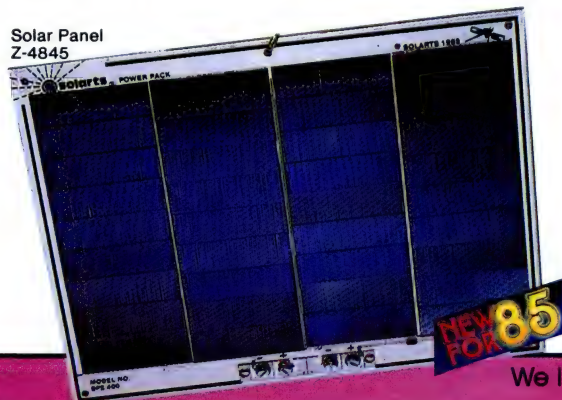
OPTO-ELECTRONICS

Type No	Device Type/Description	Cat No	Price Ea	Price 10 up
FPT100	Silicon Photo Diode with lens	Z-1950	\$1.60	\$1.50
MEL12	Silicon Darlington phototransistor with lens	Z-1952	.95	.90
BPW50	Silicon Photo-diode	Z-1956	\$2.50	\$2.30
CQY89A/ LD217	Infra-red LED	Z-3235	\$1.65	\$1.55
ORP12	Light Dependent Resistor (dark value 10Mohm; light 300 ohms)	Z-4800	\$3.25	\$3.05
DSCDS01	Cadmium Sulphide (CdS) light dependent resistor, similar range ORP12	Z-4801	.70	.65
4N28	Opto Coupler - LED & photo diode in DIP package	Z-4804	\$1.60	\$1.50

SOLAR CELLS

Cat. No.	Size	Output Volts	Output Current	Price ea	Price 10 up
Z-4840	1.5 x 1.3cm	0.43	25mA	\$2.50	\$2.25
Z-4841	6 x 6cm	0.43	100mA	\$12.00	\$11.00
Z-4845	26.5 x 20cm	2 x 10	450mA	\$219.00	O.A.

Solar Panel
Z-4845



GERMANIUM DIODES

Type No	Cat No	Price Ea	Price 10 up	PIV	If mA	Use
OA47	Z-3232	.60	.55	25	110	Gold Bonded General Purpose
OA90	Z-3030	.30	.25	20	45	General Purpose Point Contact
OA91	Z-3042	.35	.30	90	50	General Purpose Point Contact
OA95	Z-3050	.50	.45	90	50	General Purpose Point Contact

SILICON SMALL SIGNAL DIODES

BA100	Z-3060	.45	.40
IN914	Z-3120	.13	.10
OA202	Z-3100	.45	.40

RECTIFIER DIODES

Type No	Cat No	Price Ea	Price 10 up	PIV	If Amp	Use
IN4002	Z-3202	.11	.09	100	1	General Purpose
IN4004	Z-3204	.13	.11	400	1	General Purpose
IN4007	Z-3207	.15	.13	1000	1	General Purpose
IN5404	Z-3222	.50	.45	400	3	General Purpose
IN5408	Z-3228	.55	.50	1000	3	General Purpose
BYX98300	Z-3242	\$2.75	\$2.50	300	10	Stud Mount
IN3492	Z-3260	\$2.95	\$2.80	100	25	Press Fit Auto

RECTIFIER BRIDGES

WO-4	Z-3304	.95	.90	400	1.5	Mini Bridge
PO-4	Z-3306	\$1.95	\$1.85	400	6	General Purpose Bridge
PB40	Z-3334	\$6.50	\$5.95	400	25	Heavy Duty Bridge

HOT CARRIER DIODE

5082-2800	Schottky diode	Z-3230	\$3.30	\$3.00
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VARICAP DIODE

BB119	Varicap similar BA102	Z-3070	\$1.10	\$1.00
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LED DISPLAYS

Type No	Digit Size	Construction	Cat No	Price Ea	Price 10 up
LT313	8mm	Common Cathode	Z-4103	\$1.95	\$1.75
LT312	8mm	Common Anode	Z-4117	\$1.95	\$1.75
FND507	12.7mm	Common Anode	Z-4152	\$1.65	\$1.55
FND560	13mm	Common Cathode	Z-4150	\$2.50	\$2.25
LT547E	13mm	Common Cathode	Z-4151	\$2.95	\$2.75
TIL393-9	13mm	9 digit LED display	Z-4155	\$1.65	\$1.55

LIQUID CRYSTAL DISPLAY

LCD4.5	10mm 4 1/2 digit liquid crystal	Z-4175	\$10.95	\$9.60
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ULTRASONIC TRANSDUCERS

Highly sensitive transmit/receive pair for alarms, level detectors, TV remote control, etc. Data sheet available.

Transmitter:	SCS-401	Cat L-7050	\$5.75	(10 up \$5.20)
Receiver:	SCM-401	Cat L-7052	\$6.50	(10 up \$5.90)

LIGHT EMITTING DIODES

Type No	Colour	Size	Cat No.	Price EA	Price 10 up	if (mA)	vf @ 20 mA	Intensity @ 20mA	Notes
LT201R	Red	3mm diam	Z-4010	.15	.13	40	1.6	0.8mCd	Economy
LT231G	Green	3mm diam	Z-4020	.20	.18	40	2.2	0.8mCd	Economy
LT203R	Red	5mm diam	Z-4030	.20	.16	40	1.6	1.0mCd	Economy
LT233G	Green	5mm diam	Z-4032	.30	.25	40	2.2	1.0mCd	Economy
LT253Y	Yellow	5mm diam	Z-4034	.22	.20	40	2.3	1.0mCd	Economy
LT293E	Orange	5mm diam	Z-4036	.25	.22	40	1.7	1.0mCd	Economy
LT2462-52	Rd./Gr.	5mm diam	Z-4070	.60	.55	40	2.5	3.0mCd	Dual
ESBR5501	Red	5mm diam	Z-4075	\$1.00	.90	50	1.7	200mCd	High Intensity
TL4211	Red	3mm diam	Z-4077	.30	.25	40	2.1	3.5mCd	Premium Quality
TL4231	Green	3mm diam	Z-4079	.35	.30	40	2.1	5.0mCd	Premium Quality
TL4251	Yellow	3mm diam	Z-4081	.50	.45	40	2.1	5.0mCd	Premium Quality
TL4291	Orange	3mm diam	Z-4083	.50	.45	40	2.0	7.0mCd	Premium Quality
TL4213	Red	5mm diam	Z-4085	.30	.25	40	2.1	4.0mCd	Premium Quality
TL4233	Green	5mm diam	Z-4087	.35	.30	40	2.1	6.0mCd	Premium Quality
TL4253	Yellow	5mm diam	Z-4089	.40	.35	40	2.0	6.0mCd	Premium Quality
TL4293	Orange	5mm diam	Z-4091	.40	.35	40	2.1	9.0mCd	Premium Quality
TL3215S	Red	2mm x 5mm	Z-4093	.40	.35	40	2.1	1.2mCd	Rect. Prem. Qual.
TL3235S	Green	2mm x 5mm	Z-4095	.40	.35	40	2.1	1.2mCd	Rect. Prem. Qual.
TL3255S	Yellow	2mm x 5mm	Z-4097	.40	.35	40	2.1	1.2mCd	Rect. Prem. Qual.
Z6211	Red	2mm x 5mm	Z-4040	.25	.22	40	1.6	1.0mCd	Rectangular Econ.
Z6221	Green	2mm x 5mm	Z-4042	.25	.22	40	2.2	1.0mCd	Rectangular Econ.
Z6231	Yellow	2mm x 5mm	Z-4044	.25	.22	40	2.3	1.0mCd	Rectangular Econ.
CQY89A	Infrared	5mm diam	Z-3235	\$1.65	\$1.55	130		9mW/sr	Infra-red output

INTEGRATED CIRCUITS

Digital



Type No	Description	Cat No	Price Ea	Price 10 up
81LS95	Tri-state octal driver	Z-5300	\$3.25	\$2.95
11C90	650MHz ECL pre-scaler	Z-5361	\$16.00	\$14.50
DAC0800LCN	8 Bit D to A converter (non linearity $\pm 0.1\%$ FS)	Z-6834	\$4.80	\$4.40
DS1488	RS-232C Quad line driver	Z-5370	\$1.95	\$1.85
MM5837	Noise generator	Z-6130	\$4.30	\$3.90
ICL7106	LCD digital voltmeter	Z-6300	\$17.50	\$16.00
AY-3-8112	Clock/frequency counter	Z-6832	\$9.50	\$8.90
2513	ASCII character generator	Z-9206	\$24.75	\$22.75
2516	2K x 8 bit EPROM	Z-9207	\$7.65	\$7.00
2532	4K x 8 bit EPROM	Z-9208	\$10.95	\$10.00
2102	1K x 1 static RAM	Z-9302	\$2.75	\$2.50
2114	1K x 4 static RAM	Z-9306	\$2.75	\$2.50
4116	16K x 1 dynamic RAM	Z-9310	\$3.25	\$2.95
4164	64K x 1 dynamic RAM	Z-9312	\$7.50	\$7.00
MM5303	UART	Z-9204	\$7.65	\$7.15
Z-80CPU	Microprocessor CPU	Z-9100	\$6.95	\$6.50
Z-80PIO	Microprocessor PIO	Z-9101	\$6.95	\$6.50
2732A	4K x 8 EPROM (Intel)	Z-9209	\$14.95	\$13.95
HM6116P-4	2K x 8 CMOS Static RAM	Z-9308	\$13.95	\$12.95

TTL

Type No	Description	Cat No	Price Ea	Price 10 up
7400	Quad 2 input NAND gate	Z-5010	.80	.75
7401	Quad 2 input NAND o/collector	Z-5011	.80	.75
7402	Quad 2 input NOR gate	Z-5012	.80	.75
7404	Hex inverter	Z-5014	.80	.75
7405	Hex Inverter open collectors	Z-5015	.80	.75
7408	Quad 2 input AND gate	Z-5018	.80	.75
7410	Triple 3 input NAND gate	Z-5020	.80	.75
7413	Dual 4 input NAND Schmitt trigger	Z-5023	.85	.80
7414	Hex Schmitt trigger	Z-5024	\$1.10	\$1.00
7420	Dual 4 input NAND gate	Z-5030	.80	.75
7430	8 input NAND gate	Z-5035	.80	.75
7437	Quad 2 input NAND buffer	Z-5040	.80	.75
7447	BCD-7 segment decoder/driver	Z-5047	\$1.70	\$1.60
7454	2-wide, 2 input AND-OR invert gate	Z-5054	.80	.75
7473	Dual J-K master/slave flip flop	Z-5073	.90	.85
7474	Dual D-type edge triggered flip flop	Z-5074	.85	.80
7475	Quad bistable latch	Z-5075	.85	.80
7476	Dual J-K master/slave flip flop	Z-5076	.90	.85
7485	4 bit magnitude comparator	Z-5085	\$1.40	\$1.30
7486	Quad 2 input EXCLUSIVE-OR gate	Z-5086	.95	.90
7490	Decade Counter	Z-5090	\$1.00	.95
7492	Divide by 12 counter	Z-5092	\$1.00	.95
7493	4 bit binary counter	Z-5093	\$1.00	.95
7495	4 bit L-R shift register	Z-5095	\$1.20	\$1.10
74109	Dual J-K flip flop	Z-5252	\$1.00	.95
74121	Monostable multivibrator	Z-5260	.90	.85
74123	Dual re-triggerable monostable	Z-5263	\$1.35	\$1.25
74157	Quad 2 input multiplexer	Z-5267	\$1.00	.95
74191	Sync. binary up/down counter	Z-5269	\$1.60	\$1.50
74192	Sync. decade up/down counter	Z-5270	\$1.60	\$1.50
74193	Sync. binary up/down counter	Z-5280	\$1.60	\$1.50
74196	Decade divider	Z-5281	\$1.50	\$1.40

74LS

Type No	Description	Cat No	Price Ea	Price 10 up
74LS00	Quad 2 input NAND gate	Z-4900	.70	.65
74LS01	Quad 2 input NAND gate, o/collector	Z-4901	.70	.65
74LS02	Quad 2 input NOR gate	Z-4902	.70	.65
74LS04	Hex inverter	Z-4904	.70	.65
74LS05	Hex inverter, open collector	Z-4905	.70	.65
74LS08	Quad 2 input AND gate	Z-4908	.70	.65
74LS10	Triple 3 input NAND gate	Z-4910	.70	.65
74LS11	Triple 3-input AND gate	Z-4912	.70	.65
74LS14	Hex Schmitt trigger	Z-4914	.85	.80
74LS20	Dual 4 input NAND gate	Z-4920	.70	.65
74LS21	Dual 4-input positive AND gate	Z-4924	.95	.90
74LS27	Triple 3 input NOR gate	Z-4927	.70	.65
74LS30	8 input NAND gate	Z-4930	.70	.65
74LS31	Delay line	Z-4931	\$1.65	\$1.55
74LS32	Quad 2 input OR gate	Z-4932	.70	.65
74LS73	Dual J-K flip flop	Z-4973	\$1.00	.95
74LS74	Dual D-type edge trig. flip flop	Z-4974	\$1.00	.95
74LS76	Dual J-K master/slave flip flop	Z-4976	\$1.00	.95
74LS85	4 bit magnitude comparator	Z-4985	\$1.50	\$1.45
74LS86	Quad 2 input EXCLUSIVE-OR gate	Z-4986	\$1.00	.90
74LS90	Decade counter	Z-4990	\$1.25	\$1.15
74LS92	Divide by 12 counter	Z-4992	\$1.25	\$1.15
74LS93	4 bit binary counter	Z-4993	\$1.25	\$1.15
74LS95	4 bit L-R shift register	Z-4995	\$1.50	\$1.40
74LS123	Dual monostable multivibrator	Z-5310	\$1.10	\$1.00
74LS132	Quad 2 input NAND Schmitt trigger	Z-5283	\$1.50	\$1.40
74LS138	Expandable 3/8 decoder	Z-5284	\$1.50	\$1.40
74LS139	1 of 8 decoder/multiplexer	Z-5285	\$1.40	\$1.30
74LS153	Dual 4-input multiplexer	Z-5315	\$1.10	\$1.00
74LS157	Quad 2-input multiplexer	Z-5287	\$1.15	\$1.05
74LS165	Par load 8 bit shift register	Z-5288	\$1.00	.90

74LS (cont)

Type No	Description	Cat No	Price Ea	Price 10 up
74LS174	Hex D-type flip flop	Z-5290	\$1.10	\$1.00
74LS175	Quad D flip flop	Z-5291	\$1.15	\$1.05
74LS190	Up/down decade counter	Z-4999	\$1.40	\$1.30
74LS191	Up/down binary counter	Z-5000	\$1.50	\$1.40
74LS221	Dual monostable multivibrators (schmitt-trigger)	Z-5296	\$1.75	\$1.65
74LS240	Octal buffer/line driver	Z-5298	\$2.20	\$2.00
74LS241	Octal buffer/line driver	Z-5293	\$2.10	\$1.90
74LS244	Octal buffer/line driver	Z-5294	\$2.40	\$2.20
74LS245	Octal bus transceiver	Z-5299	\$2.20	\$2.00
74LS367	Hex bus driver & 3 stage o/p	Z-5292	\$1.25	\$1.15
74LS373	Octal 3 stage latch	Z-5295	\$2.50	\$2.30
74LS374	Octal D-type flip flop	Z-5297	\$2.00	\$1.90

74C/4000 CMOS

Type No	Description	Cat No	Price Ea	Price 10 up
74C00	Quad 2 input NAND gate	Z-5410	.80	.75
74C14	Hex Schmitt trigger	Z-5413	.80	.75
74C74	Dual D-type edge triggered flip flop	Z-5372	\$1.30	\$1.20
74C157	Quad 2-input multiplexer	Z-5374	\$3.75	\$3.55
74C173	4 Bit D-type register	Z-5376	\$2.55	\$2.45
74C221	Dual monostable multivibrators (schmitt-trigger)	Z-5378	\$4.10	\$3.80
74C922	16 Key encoder	Z-5380	\$9.50	\$9.00
74C926	4 decade counter 7 seg. output	Z-5414	\$8.75	\$8.00
74C946	4.5 digit counter/LCD driver	Z-6301	\$21.95	\$19.95
4000	Dual 3 input NOR with inverter	Z-5600	.60	.55
4001	Quad 2 input NOR gate	Z-5601	.60	.55
4002	Dual 4 input NOR gate	Z-5602	.85	.80
4007	Dual comp pair with inverter	Z-5607	.85	.80
4009	Hex inverter buffer/level shift	Z-5609	\$1.00	.90
4011	Quad 2 input NAND	Z-5611	.60	.55
4012	Dual 4 input NAND	Z-5612	.65	.60
4013	Dual D edge triggered flip flop	Z-5613	\$1.10	\$1.00
4015	Dual 4 bit shift register	Z-5615	\$1.25	\$1.15
4016	Quad analog switch	Z-5616	\$1.00	.90
4017	Decade counter/divider	Z-5617	\$1.45	\$1.30
4019	Quad AND/OR select gate	Z-5619	\$1.10	\$1.00
4020	14 bit binary counter	Z-5620	\$1.50	\$1.35
4022	Divide by 8 counter	Z-5622	\$1.50	.75
4023	Triple 3 input NAND gate	Z-5623	.75	.70
4024	7 stage ripple counter	Z-5624	\$1.20	\$1.10
4025	Triple 3 input NOR gate	Z-5625	.65	.55
4026	Decade counter/7 segment divider	Z-5626	\$2.50	\$2.25
4027	Dual J-K flip flop	Z-5627	\$1.10	\$1.00
4028	BCD to decimal decoder	Z-5628	\$1.20	\$1.10
4029	Preset up/down binary decade counter	Z-5629	\$1.50	\$1.40
4030	Quad EXCLUSIVE OR gate	Z-5630	\$1.20	\$1.10
4040	12 stage ripple counter	Z-5640	\$1.75	\$1.60
4044	Quad 3-state NAND RS latch	Z-4370	\$1.65	\$1.55
4046	Phase-locked-loop	Z-5646	\$2.10	\$1.90
4047	Monostable/Astable multivibrator	Z-5647	\$1.90	\$1.75
4049	Hex inverter/buffer	Z-5649	.90	.80
4050	Hex non inverting buffer	Z-5650	\$1.00	.90
4051	8 channel analog multiplexer	Z-5651	\$1.50	\$1.40
4066	Quad analog switch	Z-5666	\$1.30	\$1.20
4068	8 input NAND gate	Z-5668	.80	.75
4069	HEX Inverter	Z-5669	\$1.00	.90
4071	Quad 2 input OR gate	Z-5671	.65	.55
4081	Quad 2 input buffered AND gate	Z-5681	.70	.65
4082	Dual 4 input AND gate	Z-5682	.65	.55
4093	Quad 2 input NAND Schmitt trigger	Z-5693	.90	.80
40194	4 bit bi-direct shift register	Z-5694	\$3.90	\$3.60
4511	BCD/7 segment decoder/driver/latch	Z-5730	\$1.95	\$1.80
4516	Synchronous up/down counter	Z-4362	\$2.30	\$2.00
4518	Dual BCD up counter	Z-5740	\$2.15	\$1.95
4520	Dual binary up counter	Z-5742	\$1.75	\$1.60
4526	4 bit programmable down counter	Z-5744	\$1.85	\$1.70
4528	Dual monostable	Z-4366	\$2.45	\$2.20

74HC

Type No	Description	Cat No	Price Ea	Price 10 up
74HC00	Quad 2-input NAND gate	Z-5800	.90	.80
74HC02	Quad 2-input NOR gate	Z-5802	.90	.80
74HC04	Hex inverter	Z-5804	.90	.80
74HC08	Quad 2-input AND gate	Z-5808	.90	.80
74HC11N	Triple 3-input	Z-5811	.90	.80
74HC14	Hex Schmitt-Trigger	Z-5814	\$1.80	\$1.70
74HC27	Dual J-K flip flop	Z-5827	.90	.80
74HC30	8 input NAND gate	Z-5830	.90	.80
74HC32	Quad 2-input OR gate	Z-5832	.90	.80
74HC74	Dual D-type edge triggered flip flop	Z-5874	\$1.30	\$1.10
74HC76	Dual J-K master/slave flip flop	Z-5876	\$1.30	\$1.10
74HC85	4 Bit magnitude comparator	Z-5885	\$1.80	\$1.65
74HC86	Quad 2-input EXCLUSIVE OR gate	Z-5886	\$1.30	\$1.10
74HC123	Dual re-triggerable monostable	Z-5910	\$1.80	\$1.65
74HC138	Expandable 3/8 decoder	Z-5915	\$1.80	\$1.65
74HC139	1 of 8 decoder/multiplexer	Z-5920	\$1.80	\$1.65
74HC157	Quad 2-input multiplexer	Z-5925	\$1.80	\$1.65
74HC165	Par load 8-bit shift register	Z-5930	\$2.90	\$2.65
74HC174	Hex D-type flip flop	Z-5935	\$1.80	\$1.65
74HC221	Dual monostable multivibrators (Schmitt-trigger)	Z-5940	\$3.95	\$3.65
74HC240	Octal buffer/line driver	Z-5945	\$2.90	\$2.65
74HC244	Octal buffer/line driver	Z-5950	\$2.90	\$2.65
74HC245	Octal bus transceiver	Z-5955	\$4.50	\$4.10
74HC367	Hex bus driver & 3 state o/p	Z-5960	\$1.80	\$1.65
74HC373	Octal 3 state latch	Z-5965	\$3.30	\$2.95

Linear

Type No	Description	Cat No	Price Ea	Price 10 up
ADC0802LCN	8-Bit A to D converter (error $\pm 5\%$ LSB)	Z-6833	\$13.95	\$12.90
LM311	Voltage comparator	Z-6048	\$1.00	.90
LM319N	High speed comparator	Z-6049	\$3.70	\$3.50
LM334Z	Temperature sensor	Z-6810	\$2.15	\$2.00
LM335H	Precision temperature sensor (TO-46)	Z-6050	\$4.00	\$3.60
LM35Z	Precision temperature sensor (TO-92)	Z-6051	\$2.40	\$2.20
LM336AZ2-5	2.5V Reference source	Z-6036	\$4.95	\$4.70
LM336BZ5-0	2.5V Reference source	Z-6037	\$4.95	\$4.70
LM339	Quad comparator	Z-6039	\$1.25	\$1.10
LM380	Audio power amplifier	Z-6080	\$2.50	\$2.30
LM381	Low noise stereo preamplifier	Z-6081	\$2.75	\$2.50
LM382	Low noise stereo preamplifier	Z-6082	\$2.20	\$2.00
LM386	Audio power amplifier	Z-6086	\$1.95	\$1.80
LM394C	Dual diff. supermatched pair	Z-6083	\$6.50	\$6.00
LM567	Tone decoder	Z-6167	\$2.00	\$1.85
LM1871N	RC encoder	Z-6103	\$6.95	\$6.30
LM1872N	RC decoder	Z-6104	\$6.95	\$6.30
LM2917	Frequency to voltage/current source	Z-6112	\$3.45	\$3.15
LM3046N	NPN Transistor array	Z-6107	\$1.85	\$1.75
LM3909	LED flasher/oscillator	Z-6109	\$2.15	\$2.00
LM3914	10 LED driver	Z-6295	\$4.95	\$4.50
MC10116L	Triple differential amplifier	Z-5415	\$1.95	\$1.85
MC3357	Low power NBFM IF strip	Z-6900	\$4.35	\$3.95
NE/DS 555	Universal timer	Z-6145	.60	.50
NE556	Dual timer	Z-6146	\$1.10	\$1.00
OM350	Wideband VHF/UHF amplifier	Z-6185	\$10.95	\$9.95
SN76604N	Servo Amplifier (RC)	Z-6835	\$5.25	\$4.75
TA7205	General purpose CB audio amplifier	Z-2503	\$4.50	\$4.20
TL555CP	CMOS timer (CMOS version of 555)	Z-6144	\$1.00	.90
XR-2206	Function generator	Z-6820	\$8.75	\$8.50
ZN414	One-chip radio	Z-6520	\$4.35	\$3.95
76488N	Universal sound synthesiser	Z-6823	\$7.50	\$7.00



Dual diff. supermatched pair?

LINEAR OPERATIONAL AMPS

Type No	Description	Cat No	Price Ea	Price 10 up
CA3080	Transconductance op amp	Z-6024	\$2.45	\$2.20
CA3100	Wideband op amp	Z-6010	\$7.20	\$6.50
CA3130	Fet input op amp	Z-6025	\$2.95	\$2.80
CA3140	Fet input op amp	Z-6417	\$1.60	\$1.40
LM10CLN	Op amp/voltage reference	Z-6084	\$6.95	\$6.30
LM301	General purpose op-amp	Z-6040	\$1.00	.90
LM308	General purpose op-amp	Z-6045	\$1.20	\$1.10
LM324	Quad op amp	Z-6102	\$1.20	\$1.10
LM3900	Quad 'Norton' op amp	Z-6100	\$1.30	\$1.20
LM13080N	Programmable power op amp	Z-6106	\$1.99	\$1.90
LM13600N	Dual transconductance amplifier	Z-6113	\$1.95	\$1.85
NE5534P	Low noise op amp	Z-6090	\$2.95	\$2.65
TL071CP	JFET op amp	Z-6030	\$1.20	\$1.10
TL072CP	Dual JFET op amp	Z-6032	\$1.45	\$1.35
TL074CP	Quad JFET op amp	Z-6034	\$3.40	\$3.10
TLC251	Programm. low power (CMOS) op amp	Z-6021	\$3.25	\$2.95
uA709	General purpose op amp	Z-6352	\$1.50	\$1.30
uA741	General purpose op amp	Z-6382	.80	.75
uA4136	Quad op amp	Z-6105	\$2.00	\$1.80

VOLTAGE REGULATORS

Type No	Description	Cat No	Price Ea	Price 10 up
LM78L05CZ	3-Terminal 5V 100mA positive regulator	Z-6108	.60	.55
LM78L12ACZ	3-Terminal 12V 100mA positive regulator	Z-6110	.60	.55
LM78L15ACZ	3-Terminal 15V 100mA positive regulator	Z-6111	.60	.55
LM350	Adjustable 1.2-32V 3A regulator	Z-6560	\$5.45	\$4.95
LM723	Adjustable 2-37V 150mA regulator	Z-6362	.95	.75
LM317/T	Adjustable 1.2-37V 1.5A, TO-220 case	Z-6541	\$2.10	\$1.90
LM317/K	Adjustable 1.2-37V 1.5A, TO-3 case	Z-6542	\$3.85	\$3.50
7805	3 terminal 5 volt 1A positive regulator	Z-6545	\$1.10	\$1.00
7812	3 terminal 12 volt 1A positive regulator	Z-6552	\$1.20	\$1.10
7815	3 terminal 15 volt 1A positive regulator	Z-6554	\$1.20	\$1.10
7905	3 terminal 5 volt 1A negative regulator	Z-6555	\$1.50	\$1.40
7912	3 terminal 12 volt 1A negative regulator	Z-6556	\$1.50	\$1.40
7915	3 terminal 15 volt 1A negative regulator	Z-6557	\$1.50	\$1.40
uA78H05	5 volt 5A positive regulator, TO-3	Z-6570	\$12.50	\$11.50

For more data, case connections, etc see data pages

ALUMINIUM HEATSINKS

PCB MOUNTING

Just right for today's projects with everything mounted on the pcb: two heatsinks that also mount on the pcb. Designed to be soldered direct to the tracks, with their fins mounted vertically for even more heat loss.

Two handy types to choose from:

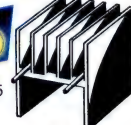
LARGE:

H pattern, 30 x 30 x 30mm, drilled to take a single flat-pack semiconductor (can be re-drilled for other types).

Cat H-3495

\$1.70

NEW FOR 85
10 up \$1.55



SMALL:

U pattern, 17 x 15 x 30mm high. Again, drilled for a single flat-pack, with tapped 4BA hole.

Cat H-3490

\$1.20

NEW FOR 85
10 up \$1.10



ROUND TO-5

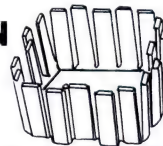
Manufactured to exacting tolerances to ensure a snug fit and best possible heat transfer on TO-5 cases. Massive body allows rapid heat dissipation.

Cat H-3412

10 or more.....

1-9 65¢ ea
10 or more..... 60¢ ea

POWERFIN FOR TO-3



This heatsink gives the greatest possible heat dissipation in the smallest possible space. It has a unique fin design that gives a very high air to metal ratio (thermal rating approximately 5 degrees C/Watt). Measures only 50mm square x 25mm high, pre-punched to suit TO-3 case. Black anodised finish.

Cat H-3400

10 or more.....

1-9 \$1.95 ea
10 or more..... \$1.80 ea

VERSATILE POWER HEATSINK

The ingenious design of this heatsink makes it possible to mount it either flat on a panel, or at right angles to it (eg inside a case). The side fins also have tongue & groove so they may be joined sideways. Drilled version takes 2x TO-3's. Size is (mm) 78 x 110 x 33.

Undrilled Cat H-3460

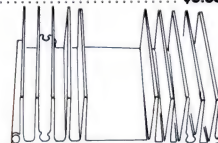
5 or more.....

1-4 \$5.75 ea
5 or more..... \$5.25 ea

Pre-drilled Cat H-3461

5 or more.....

1-5 \$5.95 ea
5 or more..... \$5.35 ea



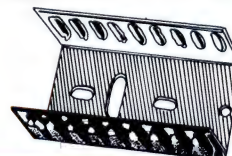
UNIVERSAL

Universal hole pattern allows the mounting of virtually all 'power' type semiconductors. Ribbed walls and black anodised finish for maximum efficiency.

Cat H-3401

10 or more.....

1-9 \$1.25 ea
10 or more..... \$1.15 ea



TO-220 HEATSINK PACKS

Pack of five clip-on heatsinks for TO-220 type semis (also adaptable to other types). Size 25 x 20mm, spring-type connection ensures good metal contact for efficient heat transfer.

Cat H-3415

NEW FOR 85
\$3.25



MINI



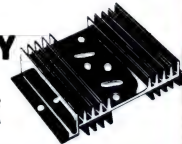
Because it suits virtually all flat (plastic type) semiconductors, this heatsink is used extensively on PCB, etc. Has vertical flutes for maximum thermal efficiency.

Cat H-3402

10 or more.....

1-9 95¢ ea
10 or more..... 85¢ ea

ECONOMY POWER HEATSINK



Flag mounting with fins both top and bottom. Available in either drilled or undrilled versions, drilled accepts two power transistors of most type: TO-3, TO-126, TO-220, etc. Size (mm) 75 x 102 x 25. Thermal resistance mounting surface to ambient -1 degree/watt (at 2 ft/sec forced air flow). Mounting surface temperature rise above ambient with no forced air flow 60 degrees @ 30W heat dissipation level.

Undrilled Cat H-3470

10 or more.....

1-9 \$3.90 ea

Pre-drilled Cat H-3471

10 or more.....

1-9 \$3.55 ea
10 or more..... \$4.10 ea

HIGH EFFICIENCY POWER HEATSINK

With its thick base and radial fin design this heatsink is able to dissipate huge amounts of heat. It is black anodised for even greater efficiency. Thermal resistance mounting surface to ambient -1 degree/watt (at 2 ft/sec forced air flow). Mounting surface temperature rise above ambient with no forced air flow 60 degrees @ 30W heat dissipation level.

Undrilled Cat H-3422

10 or more.....

1-9 \$3.75 ea

Pre-drilled Cat H-3461

10 or more.....

1-5 \$3.40 ea
10 or more..... \$3.40 ea



EXTRA HEAVY DUTY POWERFIN HEATSINK

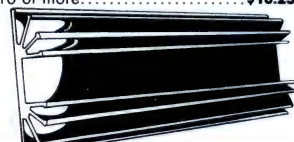
225mm length! Similar to above heatsink in cross section, but three times the length. For those big projects where a lot of heat has to be removed.

Cat H-3426

10 or more.....

1-9 \$11.25 ea

10 or more..... \$10.25 ea



KNOBS & RELAYS

KNOBS Metric Range



Tiny elegant knob, finished in black with silver shoulder and pointer. 14mm diam, 12mm deep.
Cat H-3820

10 or more **70¢** **75¢**



Black body with deep flutes down side for positive grip. White radius pointer. Size 16mm diam, 17mm deep.
Cat H-3826

10 or more **75¢** **85¢**



Black finished knob with silver shoulder and white marker. 21mm diam, 22mm deep.
Cat H-3830

10 or more **\$1.00**



Aluminum knob with fine serrations down top third of body. With pointer, size 21mm diam, 18mm deep.
Cat H-3834

10 or more **\$1.05** **\$1.15**



Superbly elegant knob in bright aluminum with fine vertical lines around body. 25mm diam, 17mm deep
Cat H-3842

10 or more **85¢** **95¢**



Incredibly popular knob for quality project use. Satin finish aluminum with knurled body. 25mm diam, 17mm deep.
Cat H-3843

10 or more **\$1.00** **\$1.10**



The smallest of four matching project knobs. Integral pointer across top, size just 11mm body, 15mm skirt and 15mm overall.
Cat H-3850

10 or more **55¢** **60¢**



A little larger: ideal for test instruments, etc. 15mm wide with 20mm skirt, knob height 15mm.
Cat H-3855

10 or more **70¢** **80¢**



Larger again: great as a tone control or switch control on amplifiers, etc. 20mm wide with 25mm skirt, 16mm deep.
Cat H-3860

10 or more **80¢** **90¢**



The largest of the series: ideal volume or main control used in conjunction with above knobs. 35mm wide skirt, 28mm wide body and 17mm height.
Cat H-3865

10 or more **\$1.10** **\$1.20**

COLOURED PLASTIC KNOBS

What a colourful idea! Now your projects can really look the part with these snazzy coloured knobs. Use them to colour code sections (great on multi-channel mixers, lighting consoles, etc). 16mm diam, standard metric (fluted shaft) fitting. Inserts can be changed to suit the occasion! Choice of four with-it colours:

ALL ONE PRICE: \$1.35 EA
(10 up \$1.20 ea)



RED: Cat H-3800 **ORANGE:** Cat H-3802 **BLUE:** Cat H-3804 **GREEN:** Cat H-3806

SLIDER POT KNOBS



Push-on knob for 8mm slider pot shafts. 'Chromed' plastic with black face and marker line. 15mm deep, with rear dimensions 10.5 x 16mm. Cat H-3780

10 up **75¢** **80¢**



Black anodised knob to suit slider pots. As used in the Playmaster Graphic Equaliser Size 10mm dia. 16mm deep.
Cat H-3782

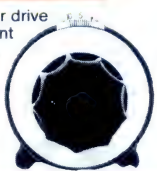
10 up **55¢** **60¢**

VERNIER DRIVE

Precision vernier drive designed for front panel mounting. 50mm diam.
Cat H-3900

\$5.95

10 up **\$5.50**



IMPERIAL EXTENSION SHAFT

Machined brass shaft for imperial pot shafts, tuning gangs, etc.
Cat H-3950

\$2.20

10 up **\$1.95**



KNOBS Imperial Range



A superb instrument knob with wide skirt, calibrated 1-10 in black on silver. Size 37mm dia. 15mm deep.
Cat H-3770

\$4.10

10 up **\$1.00**



Another very popular knob. The pointer runs right through from the top to the edge of the skirt. Silver insert. Size 24mm dia. 14mm deep.
Cat H-3772

80¢

10 up **75¢**



Small knob with fluted sides, small skirt with dot pointer. Size 19mm dia. 13mm deep.
Cat H-3762

65¢

10 up **60¢**



A very popular knob for all instruments, etc. Very positive grip and wide skirt with white pointer engraved on top. Size 32mm dia. 16mm deep.
Cat H-3766

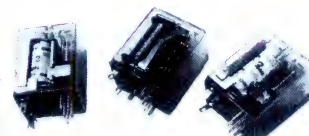
70¢

10 up **65¢**

RELAYS

CRADLE RELAYS

Our standard cradle relay range is perfect for hobbyist projects, industrial replacement, etc. They suit the sockets below if PCB mounting is required. Insulation effective to 500V at 50Hz, with contacts rated at 30W (1A or 100V). Operation time typically 6-10ms, release time typically 3-4ms.



Gold flashed silver contacts handle 30W (1A or 100V)

Cat No.	S-7012	S-7020
Voltage	12 Volt	12 Volt
Contact type	DPDT	4PDT
Coil voltage - Min.	8V	8V
Nom.	12V	12V
Max.	17V	17V
Coil resistance	325 ohms	185 ohms
Contact assembly	2 C/O	4 C/O
Price each	\$8.50	\$9.50
10 or more	\$7.65	\$8.55

CRADLE RELAY SOCKETS

Silver plated socket to suit Cradle relays.

2.C.O. Type	4.C.O. Type
Cat P-4732	Cat P-4734

Price each: **\$2.40**
10 or more: **\$2.20**

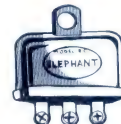


12V AUTOMOTIVE RELAYS HORN RELAY

Heavy duty relay intended for use in 12 volt vehicle systems. Very high contact rating is ideal for horns, ignition disables, burglar alarms, etc. Negative switching only. SPST contact.

Contact current (max):	S-7302
Contact voltage (nom):	12V
Nominal coil voltage:	12V

Price each: **\$4.60**
10 or more: **\$4.20**

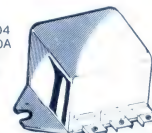


DOUBLE POLE LAMP RELAY

Very heavy duty relay, with double pole contacts each rated at a massive 30 amps. Ideal for such applications as Q1 driving lights - or wire both contacts in parallel for a huge 60 amps single pole relay!

Contact current (max):	S-7304
Contact voltage (nom):	2 x 30A
Nominal coil voltage:	12V

Price each: **\$12.50**
10 or more: **\$11.50**

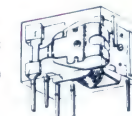


PCB MOUNTING RELAYS ULTRA MINIATURE

Low cost mini relay for projects without a lot of spare room! Fits a standard 2.54mm matrix (eg Vero or DIL) boards & the 5V version interfaces (via suitable buffer) to TTL. Contact rating is 100V at 0.5A (res). SPST.

Contact current (max):	S-7105	S-7112
Contact voltage (max):	1A	2A
Nominal coil voltage:	100V AC	100V AC
Coil resistance:	5V	12V
	56 ohm	320 ohm

Price ea: **\$3.45**
10 or more: **\$3.20**

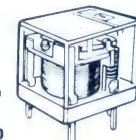


MINIATURE

Small in size but very handy contact rating! The silver plated SPDT contacts will handle up to a massive 2 amps (at 24V DC or 100V AC). Nominally 8 to 12V operating, but will work ok up to 15 volts.

Contact current (max):	S-7120
Contact voltage (Max):	2A
Nominal coil voltage:	100V
Coil resistance:	8-12V
	225 ohm

Price ea: **\$2.45**
10 or more: **\$2.20**

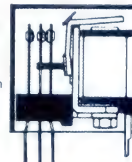


STANDARD

Our most popular relay. Ideal for direct mounting on PCB's. Housed in plastic dustproof case; as used in a large number of EA and ETI projects.

Contact current (max):	SPDT	DPDT
Contact voltage (max):	S-7125	S-7130
Nominal coil voltage:	5A	5A
Coil resistance:	240V	240V
	12V	12V
	180 ohm	200 ohm

Price ea: **\$7.70**
10 or more: **\$7.15**

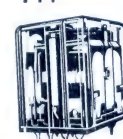


HIGH RATING POWER RELAY

A small, but high capacity relay ideal for power switching with a massive contact rating of 10A. Great for switching 240V projects from transistor or IC control.

Contact current (max):	S-7200
Contact voltage (Max):	10A
Nominal coil voltage:	240V
Coil resistance:	12V
	160 ohm

Price ea: **\$10.50**
10 or more: **\$10.00**



SCOOP PURCHASE SPDT

What a bargain! Famous 'Omron' brand mini relay, can be either pcb mounted or screwed down. Ideal for huge range of circuitry, will pull in reliably from 16 volts up to 30 volts, high contact rating.

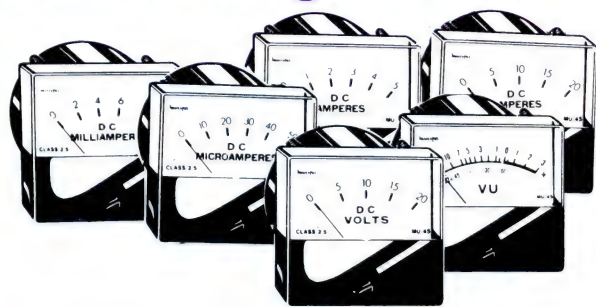
Contact current (max):	S-7014
Contact voltage (max):	8A
Nominal coil voltage:	100V
Coil resistance:	24V
	460 ohms

Price ea: **50¢**
10 or more: **45¢**



PANEL METERS, LAMPS & BEZELS

Standard Range Panel Meters



A high quality range of moving coil meters, with full scale accuracy better than 2%. Pre-calibrated in 5 popular varieties; easily adapted to suit virtually any requirement with shunts and multipliers. The scale area is covered in clear perspex, with the remainder of the meter body matte black. All the meters have a fine needle for optimum accuracy in reading, and all have mechanical zero adjustment. Mounting is by four bolts (mounted on meter body) with nuts and washers supplied.

Dimensions: Mounting:
Scale area — 58 x 31mm Hole Required — 44mm
Overall — 58 x 52mm Bolt holes: 38mm square

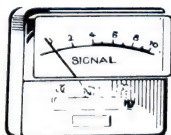
0-1 mA (200 ohms)	0-50 uA (3500 ohms)	0-5 A (0.03 ohms shunt)	0-20 A (0.007 ohms shunt)	0-20V DC (1k ohms/V)	-20+3VU (1.228V/0dB)
Cat Q-2010	Cat Q-2020	Cat Q-2030	Cat Q-2035	Cat Q-2040	Cat Q-2050

Great value!
ONLY

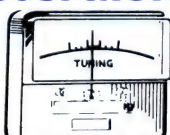
\$10⁵⁰ ea.

10 or more \$9.85 ea.

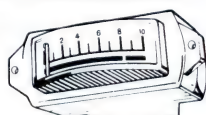
Level Meters



Signal Strength
250uA FSD
scale labelled 1-10
Cat Q-2100



Tuning Centre Zero
Sensitivity is 250uA half FSD
(in either direction).
Cat Q-2095



Edge Level Meter

\$4⁹⁵ Cat Q-2110

10 up \$4.20 ea.

As used in many imported cassettes, amplifiers, etc. Graduated 1 to 10 with 'battery check' stripe under the main scale. Scale size 32 x 10mm, it is ideal for a fine level adjustment meter, audio or battery level, etc. Mounts with screws, hole centres 49mm.

Particularly suitable for AM/FM tuner & receiver projects, but also ideal for a huge range of other projects. Meter scale size 35 x 15mm (same size as cut-out required); impedance 1k. Straw coloured meter face, looks really great back-lit.

Large Panel Meters

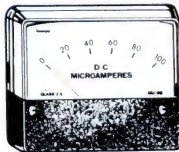
In two ranges - 100uA & 1mA
Larger style for larger projects.
Size is 100 x 82mm, scale size 100 x 50mm. Requires a 63mm mounting hole, bolt centres 80 x 64mm. Nuts & washers provided.

\$13⁹⁰ ea.

10 up \$12.50 each



0-1 mA
(200 ohms)
Cat Q-2060



0-100 uA
(3500 ohms)
Cat Q-2070

Moving Iron Range

Rugged and accurate AC/DC metres ideal for power supplies, etc. Oval style meter, size approx 55mm wide x 58mm high.

\$9⁵⁰ ea.

10 up \$8.50 each



0-10A (AC & DC)

Cat Q-2090



0-20V (AC & DC)

Cat Q-2080

Bezels

MINIATURE LED BEZEL

Our most popular. Low current drain (20mA @ 2 volts) but offering high visibility. Smart chrome bezel, needs a 7mm hole. Two colours available: red & green.

Red:
Cat S-3528

\$1⁵⁵

10 up \$1.40 ea

Green:
Cat S-3529

\$1⁶⁵

10 up \$1.50 ea



MINIATURE NEON BEZEL

A favourite because of its tiny size. Used a lot in mains powered projects - simply use 270k resistor in series. Requires only 7mm mounting hole, and the bezel itself is chrome-coloured. Remember to use a series resistor with all neons - they tend to get upset otherwise!



\$1⁰⁰

10 up 90¢ ea
Cat S-3552

240V NEON BEZEL

Intended for 240 volt projects, this bezel can be wired direct to the mains. It has a series resistor actually mounted inside the bezel case. It requires a 9mm mounting hole, front of bezel is neat clear plastic resulting in high visibility red light from neon.



\$1¹⁵

10 up \$1.00 ea
Cat S-3550

12V BEZEL

A very attractive medium size bezel using a 12V LES bulb. The plastic lens is available in two colours (red and green) for various uses, and the lens itself is flat-topped, resulting in a modern appearance. The body of the bezel is chrome plated. Requires an 11mm mounting hole, and obviously 12 volts AC or DC. don't forget to order the colour you require.



\$1⁰⁵

10 up 95¢

Red - Cat S-3510
Green - Cat S-3512

LED MOUNTING BEZELS

When using LEDs on front panels, etc, use these self-locking bezels. Suit standard size (5mm) LEDs, and make a really neat job. They work out at around 6¢ each! (Pack of 15 bezels).
Cat H-1910



95¢

Lamps

NEONS

Small pigtail type neon bulb as used in indicators, timing circuits, oscillators, etc etc. Striking voltage 70 - 90 volts at 600uA. For 240V operation use 270k 1/4W resistor (other voltages can be worked out from Ohm's law).
Cat S-3862



40¢

10 up 35¢ ea

COLOURED 240V FLOODLAMPS

Coloured PAR38 floodlamps, made of pressed glass with internal reflector for optimum brilliance. Ideal for display, party or other decorative or warning purposes. Available in four colours; 240V operated.
10 up \$7.00 ea.



Yell: S-3850
Red: S-3852
Blu: S-3854
Grn: S-3856

\$7⁸⁵

Holder to suit

Swivel Edison Screw lamp holder to suit PAR38 bulbs.
Cat P-5620



\$6²⁵

10 up \$5.75 ea.

'BLACKLITE' GLOBE

240V incandescent lamp especially made for emitting UV light. Standard bayonet cap (BC) fitting so you can plug it into an ordinary light socket. For parties, special lighting effects, etc.
Cat S-3900



\$3⁴⁷

MES/LES LAMPS

Miniature Edison Screw (MES) and Lilliput Edison Screw (LES) bulbs for dial lamps, etc. Standard 6 and 12 volt types. Ideal for all new work and replacements.

40¢
10 up 35¢



6 VOLT Cat S-3806
12 VOLT Cat S-3812

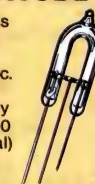
6 VOLT Cat S-3836
12 VOLT Cat S-3842

Socket to suit MES bulbs.
Cat. S-3880

10 up 60¢ ea

XENON FLASHTUBE

Xenon-filled flash tube, as used in strobes, warning and safety applications, photographic work, etc etc. And look at the bargain price: you'd expect to pay double! Operate from 200 - 400 volts (300V nominal) with 4kV trigger. 5 watts maximum input power.
Cat S-3882



\$2⁹⁵

Trigger Transformer to suit

4kV trigger transformer for above flashtube. PCB mounting type, 300V primary, 4kV sec.
Cat M-0104



\$1⁴⁵
10 up \$1.30 ea

SOCKETS PLUGS & SOCKETS

MULTI PIN PLUGS AND SOCKETS

2 PIN LINE PLUG

P-3110
65¢ 10 up 60¢

2 PIN CHASSIS SOCKET

FOR P-3110
P-3115
70¢ 10 up 65¢

4 PIN LINE PLUG
P-3120
55¢ 10 up 50¢

5 PIN LINE PLUG
P-3125
65¢ 10 up 60¢

5 PIN CHASSIS SOCKET FOR P-3120
P-3135
75¢ 10 up 70¢

COVER FOR P-3120 & P-3125
P-3140
45¢ 10 up 40¢

8 PIN CHASSIS SOCKET
P-3025
\$1.30 10 up \$1.20

8 PIN LINE PLUG WITH COVER
P-3010
\$1.30 10 up \$1.20

9 PIN PLUG & SOCKET ASSEMBLY
P-1910
\$1.75 10 up \$1.65
Complete with covers

CAR RADIO ANTENNA

ANTENNA PLUG
P-2000
50¢ 10 up 45¢

CHASSIS MOUNT SOCKET
P-2004

CRYSTAL SOCKET

TYPE K SMALL
P-4720
60¢ 10 up 55¢

QUICK CONNECT

QUICK CONNECTOR

P-5012
95¢ 10 packs or more 85¢

MALE CONNECTOR
for P-5012
P-5016
95¢ 10 packs or more 85¢

COVER FOR P-5012 & P-5016
P-5022
80¢ 10 packs or more 75¢

DOUBLE ADAPTOR
P-5026
95¢ 10 packs or more 85¢

ROUND LUG 3/16" HOLE
P-5032
80¢ 10 up 75¢

SPADE CONNECTOR
P-5036
95¢ 10 packs or more 85¢

BULLET TERMINAL (Male)
P-5006
\$1.05 10 packs or more 95¢

PLASTIC COVER TO SUIT ABOVE
P-5007
55¢ 10 packs or more 50¢

BULLET TERMINAL (female)
P-5008
\$1.05 10 packs or more 95¢

PLASTIC COVER TO SUIT ABOVE
P-5009
55¢ 10 Packs or more 50¢

SOLDER LUGS

ASSORTED SOLDER LUG PACK
Single & double ended types, 3.4mm hole.
Cat P-5044
\$1.95 Pack of 50

CAR CIG LIGHTER PLUG

Extremely handy for operating recorders or any other 12 volt appliances in your car.
Cat P-1675
85¢ 10 up 80¢

COMPUTER CONNECTORS

EDGE CONNECTORS-100 BUS
Standard 100 pin socket for S-100
High contact life for maximum efficiency. P-2670
\$10.95 10 up \$9.95

IDC EDGE CONNECTORS
34-way Cat. P-2760
10 up \$8.00
40-way Cat. P-2762
10 up \$8.75
50-way Cat. P-2764
10 up \$9.00

IDC FLAT RIBBON SOCKETS
34-way Cat. P-2750
10 up \$5.45
40-way Cat. P-2752
10 up \$6.00
50-way Cat. P-2754
10 up \$6.50

'D' TYPE CONNECTORS
PLUGS (SOLDER TAIL)
25 Pin Cat. P-2690
10 up \$3.50
15 Pin Cat. P-2687
10 up \$2.75
9 Pin Cat. P-2684
10 up \$2.20

SOCKETS (SOLDER TAIL)
25 Pin Cat. P-2691
10 up \$4.45
15 Pin Cat. P-2688
10 up \$3.65
9 Pin Cat. P-2685
10 up \$2.50
Suit P-2690, P-2691
Cat. P-2692 10 up \$2.30

Suit Challenger, RS232
Cat. P-2696
10 up \$3.50
Suit P-2687, P-2688
Cat. P-2689 10 up \$3.20
Suit P-2684, P-2685
Cat. P-2686 10 up \$1.75

25 PIN R/ANGLE PCB MOUNT
Cat. P-2695
10 up \$6.25
25 PIN IDC FLAT RIBBON
Plug Cat. P-2693
10 up \$9.50

Socket
Cat. P-2694
10 up \$10.50
\$11.50

36 WAY IDC FLAT RIBBON CENTRONICS TYPE PLUG
Cat. P-2678
10 up \$12.95
\$13.95

PRINTER PLUG
57-30360 type, suits most printers.
With cover. P-2680
\$15.95 10 up \$14.50

PRINTER SOCKET
57-403360 Centronics type socket P-2681
\$13.95 10 up \$12.50

RGB MONITOR PLUG
8-pin
Cat. P-2682
\$8.95

EDGE CONNECTORS

EDGE CONNECTOR
Designed for conventional 'plug-in' connection of 1/16" thick PC or Dick Smith strip board. Gold plated tintillate bronze contacts, rated at 5A DC standard 0.1" spacing. Comes complete with mounting feet & polarising key.
16 way edge connector.
P-2816
\$4.50 (10 up \$4.00)
24 way edge connector
P-2824
\$4.95 (10 up \$4.50)

BATTERY HOLDER & SNAPS

BATTERY SNAP
Suit 216
Cat P-6216
25¢ (10 up 20¢)

4 x "D" size HOLDER-square
Cat P-6101
55¢ (10 up 50¢)

4 x "C" size HOLDER-flat
Cat P-6104
75¢ (10 up 70¢)

4 x "A" size HOLDER-long flat
Cat P-6114
60¢ (10 up 55¢)

6 x "AA" size HOLDER-rectangular
Cat P-6116
90¢ (10 up 85¢)

4 x "AA" size HOLDER-square
Cat P-6124
60¢ (10 up 55¢)

8 x "AA" size HOLDER-rectangular
Cat P-6128
\$1.20 (10 up \$1.10)

IC SOCKETS & PLUGS

Why endanger valuable IC's by soldering them directly into circuit? Take the safe approach: use an IC socket! It makes service and repair of your project much, much easier too. There's an IC socket to suit almost all common IC's.

8 Pin Mini DIL Socket
Cat P-4080
25¢ (10 up 20¢)

14 Pin DIL Socket
Cat P-4140
30¢ (10 up 25¢)

14 Pin DIL Plug
Cat P-4142
\$2.45 (10 up \$2.25)

16 Pin DIL Socket
Cat P-4160
35¢ (10 up 30¢)

16 Pin DIL Plug
Cat P-4162
\$2.95 (10 up \$2.75)

18 Pin DIL Socket
Cat P-4180
35¢ (10 up 30¢)

20 Pin DIL Socket
Cat P-4200
40¢ (10 up 35¢)

22 Pin DIL Socket
Cat P-4220
45¢ (10 up 40¢)

24 Pin DIL Socket
Cat P-4240
50¢ (10 up 45¢)

28 Pin DIL Socket
Cat P-4245
55¢ (10 up 50¢)

40 Pin DIL Socket
Cat P-4250
70¢ (10 up 60¢)

14 Pin w/wrap DIL Socket
Cat P-4260
\$1.20 (10 up \$1.10)

20 Pin w/wrap DIL Socket
Cat P-4264
\$2.20 (10 up \$2.00)

24 Pin w/wrap DIL Socket
Cat P-4268
\$2.30 (10 up \$2.10)

TRANSISTOR SOCKETS
TO-5 suit 2N3053 etc
Cat P-4015
75¢ (10 up 70¢)
TO-3 suit 2N3055 etc
Cat P-4023
60¢ (10 up 55¢)

MOLEX IC SOCKET STRIP
Make your own IC Sockets!
Fantastic ideal! Never run out of IC sockets - because you make your own. Just cut the required number of pins from the strip and solder them in. After you insert the IC, you break off the carrier strip (also helps protect the IC from static damage). 100 pins strip.
Cat P-4504 ... Pack of 100
Molex IC socket strips.
\$2.25 (10 up \$2.05)

TERMINALS ETC

BARRIER STRIPS
Each terminal has two screws and two pre-tinned solder lugs. Mounting screw holes each end of the tough plastic base.

4-way Cat H-6704
1-9**\$1.65**
10 or more**\$1.50**
8-way Cat H-6708
1-9**\$3.20**
10 or more**\$2.90**
12-way Cat H-6712
1-9**\$4.25**
10 or more**\$3.95**

TAG STRIPS
Pre-tinned solder lugs firmly attached to phenolic board. The centre lug extends to a foot, to make a convenient earth bracket.

3-lug Cat H-6403
1-9**25¢**
10 or more**22¢**

5-lug Cat H-6405
1-9**30¢**
10 or more**25¢**

7-lug Cat H-6407
1-9**35¢**
10 or more**30¢**

MAINS TERMINAL BLOCKS
With nylon, mains terminal strip, two screws per terminal, a twelve way, or by cutting the strip, any number of terminals. 240V AC rating.

1-9 \$1.50
10 or more \$1.40

SCREW TERMINALS
Popular strips with screw terminals on one side of the phenolic strip with a mounting hole at each end.

2-way Cat H-6622
1-9**65¢**
10 or more**60¢**

4-way Cat H-6624
1-9**95¢**
10 or more**85¢**

CONNECTOR TERMINALS
Red and black plastic covered spring loaded terminals for instant connect and disconnect with solder lug on underside of phenolic mounting board.

Ideal speaker connectors on amplifiers!
4 WAY P-1765
\$1.55 10 up \$1.40

2 WAY
P-1764
90¢ 10 up 85¢

SWITCHES SWITCHES SWITCH

TOGGLE SWITCHES

ULTRA MINIATURE DPDT

The contact rating to size ratio is very high with this miniature toggle switch. Ideal for models, miniature portable instruments, or any use where a high quality miniature switch is required.

D.P.D.T.

125V AC 3A (240V AC 1.5A)

Chrome toggle with colour insert

Body size: 8mm x 9.3mm.

Clearance: 13.5mm

Complete with 2 nuts and 2 washers.

Gold plated connecting tips.

Cat S-1245

10 or more \$1.70 each

\$1.90



MINIATURE TYPES

MOST POPULAR RANGE — SPECIALLY IMPORTED — EXCELLENT QUALITY

Due to the quality of these switches they can be used in many applications.

All feature:

125V AC 5A (240V AC 2A)

Chrome toggle with colour insert

Complete with two nuts and two washers

Mounting hole size — 6mm

SPDT

Body 8mm x 13mm, clearance 17mm

125V AC 5A (240V AC 2A)

Cat S-1173

10 or more \$1.00 each

\$1.25

DPDT

Body 13mm x 13mm, clearance 17.5mm

125V AC 5A (240V AC 2A)

Cat S-1174

10 or more \$1.20 each

\$1.50

DPDT CENTRE OFF

Body 12mm x 12mm, clearance 20.5mm

125V AC 5A (240V AC 2A)

Cat S-1286

10 or more \$1.90 each

\$2.10

DPDT CENTRE OFF MOMENTARY

As above S-1286 switch, but with a spring-return momentary position on one side.

125V AC 5A (240V AC 2A)

Cat S-1287

10 or more \$2.95 each

\$3.25

4PDT

Body 13mm x 21.5mm, clearance 20.5mm.

Cat S-1175

10 or more \$5.20 each

\$5.75

HEAVY DUTY DPDT

AMAZING CONTACT CAPACITY!

Although this switch is miniature in size, it offers an enormous contact to size ratio. Ideal for use where high power levels are involved and small size is of prime importance.

Features:

125V AC 10A (240V AC 5A)

Chrome toggle with plastic cap.

Body size: 12mm x 12.5mm.

Clearance: 20.5mm

Mounting hole: 6mm

Cat S-1168

10 or more \$2.25 each

\$2.50



RIGHT ANGLE PCB MOUNTING

With extended right angle lugs for soldering direct to pcb. No mounting nuts required (there's no thread anyway!) Same style actuator as mini toggle switches above.

Cat S-1180

20V AC & DC, 0.4A

Chrome toggle and body

Mounting hole 6mm

\$2.10



4-WAY SWITCH PACK

This switch is ideal for audio switching in kit type amplifiers or similar applications. Each individual switch section is D.P.D.T. and is mechanically interlocked so that only one press button can be on at one time.

Features:

Mounting centres: 75mm

Clearance: 22mm

Push button size: 11mm

centres spaced at

17.5mm

10 or more \$4.50 each

Cat S-1904

\$4.95

SINGLE DPDT

Same high quality as the above switch bank, same features and functions. Just one of the above switches. Cat S-1906

\$2.20

10 or more \$1.95 each



PUSH BUTTON SWITCHES

SPST LAMP SWITCH

Has many, many uses but is ideally suited to replacement of desk light switches.

240V AC 2A

Cat S-1205

10 or more \$1.30 each

\$1.50

DPDT LAMP SWITCH

Double Pole version of above switch.

Rated at 2A per pole, only slightly larger than single pole version. Suits same hole (11mm), body size just 23 x 15 x 13mm.

240V AC 2A/pole.

Cat S-1210

10 or more \$1.80 each

\$1.90

ILLUMINATED SP MOMENTARY

This switch features a beautiful red 11mm square actuating button in an all black plastic case. Makes an excellent mains switch for projects.

Features:

125V AC 1A (240V AC 0.5A)

Body size: 18mm x 18mm

Clearance: 34mm

Hole cut out size: 18.5mm x

18.5mm

Indicator lamp: 6.3V

Cat S-1078

10 or more \$2.40 each

\$2.60

MINIATURE SP-NORMALLY OPEN

These are all plastic body with red illuminated pushbutton bezel. To fit into your project just push into the right size hole and they will snap fit.

Features:

125V AC 1A (240V AC 0.5A)

Body size: 28.5mm x 10mm

Clearance: 15mm

Hole size: 7mm

Cat S-1102

10 or more 45¢ each

55¢

SP ALTERNATE ACTION

The Professional Miniature! Ideal for equipment where space is very limited. It features a positive push on/push off action. The actuating black plastic button is 10mm in diameter.

Features:

125V AC 3A (240V AC 1.5A)

Body size: 11.5mm x 11.5mm

Clearance: 22mm

Hole size: 6mm

Cat S-1197

10 or more \$2.50 each

\$2.70

DPDT MOMENTARY ACTION

This is an extremely high quality push-button switch featuring precise micro switch type action. The plastic actuator button is small to conserve space whereby you can stack these switches side by side etc. Ideal for computer program switch.

Features:

125V AC 3A

Body size: 13mm x 13mm

Clearance: 14.5mm

Hole size: 6.5mm

Cat S-1220

10 or more \$2.65 each

\$2.95



ECONOMY STANDARD TOGGLE SWITCH

STANDARD SPST

A well designed switch in a bakelite case. It has a chrome toggle and is complete with two nuts and chrome ON/OFF indicator plate. Ideal for electric projects and automotive use.

Features:

125V AC 3A (240V AC 1.5A)

Body size: 14mm x 26mm

Clearance: 20.5mm

Mounting hole: 12mm

Cat S-1215

10 or more \$1.10 each

\$1.20

STANDARD DPDT

Same general features as the above switch.

Features:

125V AC 3A (240V AC 1.5A)

Body size: 18mm x 29.5mm

Clearance: 23mm

Mounting hole: 12mm

Cat S-1216

10 or more \$1.35

\$1.50

STANDARD DPDT CENTRE OFF

Rugged bakelite case, chrome toggle, red and black ON/OFF/ON indicator plate and heavy duty solder lug terminals. This switch features heavy duty contact rating. Makes ideal motor reversing switch, e.g. electric aerial on cars.

Features:

125V AC 10A (240V AC 6A)

Body size: 20mm x 35mm

Clearance: 28mm

Mounting hole: 12mm

Cat S-1217

\$1.95

10 or more \$1.70 each



SP MOMENTARY ACTION

This switch features a beautiful red 11mm square actuating button in an all black plastic case. Makes an excellent mains switch for projects. Cat S-1198

Features:

125V AC 3A (240V AC 1A)

Body size: 15mm square

Clearance: 28mm

Hole size: 12mm

Cat S-1198

10 or more \$1.45 each

\$1.60



SP ALTERNATE ACTION

As above switch, Cat S-1198, but with momentary action push/on.

Features:

125V AC 3A (240V AC 1A)

Body size: 15mm square

Clearance: 28mm

Hole size: 12mm

Cat S-1199

10 or more \$1.45 each

\$1.60



PUSH BUTTON RED/BLUE

Red or blue mini push buttons — ideal for colour-coding control panels, etc. Each handles up to 0.5A at 240V AC (1A 125V) and are momentary action (on when pushed). Switch size 14mm square; take 11mm x 12.5mm mounting hole.

BLUE: Cat S-1074

RED: Cat S-1076

10 or more \$1.35 each

\$1.50



DOOR BELL PUSH BUTTON

The kind the Avon Ladies love! Standard white/black push button to suit most types of low voltage door bells. Two screws mount to any flat surface.

Cat S-1077

\$2.15



ILLUMINATED PUSH BUTTON Lamp 12V @ 55mA.

As used in car burglar alarms, control panels, etc. Alternate action switch with inbuilt 12V globe. Square finish body, round mounting hole.

Cat S-1520

125V AC 3A (240V AC 1A)

Body size: 14mm square

Mounting hole: 12mm

Clearance: 40mm 10 or more \$6.50 each

\$6.95



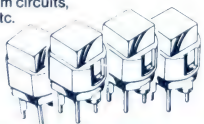
PACK OF 4 PUSH BUTTONS

Ideal for mounting on PCB's. These are momentary PUSH ON switches that have a positive click action. Ideal for alarm circuits, intercoms, custom keyboards, etc.

Cat S-1200

10 or more \$2.30 each

\$2.50



PIANO KEY DPDT

Ideal for audio and electronic projects. Superbly engineered and has a white toggle.

Cat S-1393

Features:

240V AC 3A

Mounting hole: 18mm

Clearance: approximately 15mm

Body size: 20mm x 30mm

Cat S-1393

10 or more \$3.20 each

\$3.40



ILLUMINATED SPST (12V)

Intended for automotive use. The soft glow from the toggle is not distracting, but means the switch can quickly be located. 12V lamp operates from supply being switched.

Cat S-1214

Features:

12V DC, 16A contacts

9mm mounting hole

Body size: 28 x 15mm

Cat S-1214

\$3.25

10 or more \$2.95 each



DPDT MOMENTARY ACTION

Double pole, double throw with spring loaded momentary contacts. Rated at 12V, 20A — ideal for car electric aerial switch, etc. Standard 9mm mounting hole.

Cat S-1085

10 or more \$1.95 each

\$2.20



SWITCHES SWITCHES

SLIDE SWITCHES

SUB MINIATURE DPDT

COUNTLESS APPLICATIONS — AMAZING LOW PRICE!
Sub-miniature type suitable for many types of projects, etc. So low in price it can be used for experimental projects without regard to cost! Actuator is in black plastic.

Features:

Mounting: 19mm centre
Clearance: 12mm
Body size: 8mm x 23mm
Cat. S-2010
10 or more 35¢ each



40¢

SUB MINIATURE DPDT

Same as the S-2010 but features an attractive spun aluminium actuator with black insert.

Cat. S-2020
10 or more 45¢ each



50¢

MINIATURE DPDT

This miniature switch has a spun aluminium actuator with black insert. Larger and heavier duty than the sub-miniature range.

Features:

Mounting: 28mm centres
Clearance: 14mm
Body size: 35mm x 13mm
Cat. S-2040
10 or more 65¢ each



70¢

MINIATURE DP3T

A versatile switch ideally suited to audio applications and for instruments.

Features:

Mounting: 19mm centres
Clearance: 13mm
Body size: 8mm x 24mm
Cat. S-2030
10 or more 70¢ each



80¢

MINIATURE DP6T

A printed circuit board mounting switch with a massive six positions. Each position has a positive location to avoid problems.

Features:

Mounting: 27mm centres
Clearance: 18mm
Body size: 8mm x 33mm
Cat. S-2050
10 or more 80¢ each



90¢

MINIATURE SP4T

As above, but with four positions. Ideal for input selection on printed circuit boards.

Features:

Mounting: 19mm centres
Clearance: 12mm
Body size: 8mm x 25mm
Cat. S-2060
10 or more 90¢ each



\$1.00

4PDT TOGGLE LEVER ACTION

This switch gives the smooth action of a slide switch but is actuated by an attractive spun aluminium toggle with coloured insert. Great for amplifier changeover switches because of their small size and attractive finish.

Features:

Mounting: 27mm centres
Clearance: 19mm
Body size: 9mm x 34mm
Cat. S-1301
10 or more \$1.60 each



\$1.75

8 WAY PCB DIL SWITCH

8 SPST rocker switches mounted in a DIL package. Designed for PCB mounting and may be placed in blocks or rows without wasting space. Use for pre-programming, changing circuit constants and many more uses.

Cat. S-1608
10 or more \$2.00 each



\$2.40

SPDT SLIDE

Designed for vertical mounting direct on pcb. Ideal for circuits which require occasional changing of operating parameters. 5mm between pins.

Body 13 x 6.75mm
240V AC, 2A (6A @ 28V DC)
Cat. S-1010
10 or more \$1.45 each

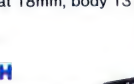


\$1.60

DPDT SLIDE

As above, but capable of switching two individual circuits at the same time. Also has 5mm between pins - in both directions. Has mountings at 18mm, body 13 x 11.5mm.

Cat. S-1015
10 or more \$1.25 each



\$1.35

DPDT 'KNIFE' SWITCH

The old 'aerial & earth' switches of Yore. Used today for changeover switches on TV antennas, etc, or any general purpose (low voltage!!) switching job.

Cat. S-1930
(10 or more \$1.30 ea)



\$1.40

ROCKER SWITCHES

ILLUMINATED DPDT

Positive action, handsome black body, bright red illuminating rocker switches, 10 amp, 240V. The terminating lugs on this switch will accept standard utilux spade clips. Mounting is push in snap lock.

Features:

240V AC 10A
Body size: 23mm x 30.5mm
Clearance: 30mm
Hole cut out size: 22mm x 27mm
Cat. S-1506
10 or more \$3.75



NEON

\$3.40 each

12V LES 12V VERSION

As above, but 12V globe.
Cat. S-1507
10 or more \$3.10

\$3.60

ILLUMINATED SPDT

Attractive rectangular shape black switch with red illuminating rocker (240V neon). Terminal lugs accept Utilux spade quick connectors. Mounting is 'snap lock'. 240V neon.

Features:

240V AC 12A
Body size: 14mm x 40mm
Clearance: 29.5mm
Hole cut out size: 12.5mm x 37.5mm
Cat. S-1503
10 or more \$2.95 each

\$3.25



SPST MINI ROCKER

Intended mainly for vehicle applications - has quick connect lugs for easy connection. Takes rectangular cut-out, 29 x 13mm. Push-to-fit.

Cat. S-1390
240V AC, 0.5A
12V DC, 2B

95¢



10 or more 85¢ each

SPST ILLUMINATED WITH BRACKET

Also for car use. Ideal for controlling driving lamp relays, etc: lamp inside switch lights when switch is on. (12V lamp). Complete with mounting bracket (can be removed for panel mounting in a 12 x 27mm cut-out).

Cat. S-1500

\$2.10



10 or more \$1.95 each

MICRO SWITCH

MICRO SWITCHES

Microswitches are used wherever a limited switching movement is required - they require only 2 or 3mm of blade movement to actuate. Very positive switching action when triggered - ideal for use in burglar alarms, machinery guards & limit switches, tamper switches, etc.

Features:

SPDT contacts
240V DC 10A rating
Body Size: 10.5mm x 28mm
Quick connect terminals
Cat. S-1920
10 or more \$1.60 each



\$1.95

MINI MICRO SWITCH

Tiny version of micro at left: just 20 x 10 x 6mm! SPDT contacts with mini quick connect terminals (just as easily soldered to!) Hole mounting 10mm apart. Actuator arm has curved end for cam or chain follower. Ideal for high quality equipment.

Cat. S-1922

\$1.05



(10 or more 95¢ each)

ALARM SWITCH

LARGE BARE REED SWITCH

Bare switch measures 40 x 5mm diameter, solid connections for ease of soldering.

Cat. L-5215

10 or more \$2.00 each



\$2.25

MINI REED SWITCH

Great where space is a problem. Wire connections, great for camouflaging in woodwork, etc. 25mm long.

Cat. S-1948

10 or more 95¢ each



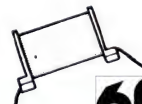
\$1.25

ACTIVATING COIL

Matches perfectly with the mini reed switch above. 430 ohm coil operates from 6 to 15V DC, gives perfect isolation between two circuits (just like a relay!)

Cat. S-1946

10 or more 50¢ each



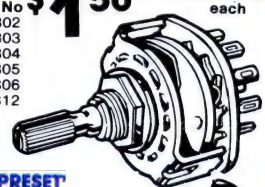
60¢

ROTARY SWITCHES

Dick Smith rotary switches are precision made to our exacting specifications. They feature easy-to-solder lugs (which can also be used for PCB mounting because of their small size); with up to 12 positions or 6 poles on one switch plate. The switch shaft is the now standard fluted 6mm type which accepts any of our standard metric range of knobs. (Imperial knobs can be used if required for matching purposes by means of a small piece of shim brass or copper, etc). Each comes with a matching washer and nut.

POLES	POSITIONS	CAT No	each
6	2	S-6302	\$1.50
4	3	S-6303	10 or more \$1.30
3	4	S-6304	
2	5	S-6305	
2	6	S-6306	
1	12	S-6312	

Body size: 30 x 25mm
Shaft length: 15mm



SPDT PCB MOUNT 'PRESET'

Vertically mounting on pcb for preset applications. Insulated shaft makes it suitable for reasonably high voltage applications; very sure break before make.

Cat. S-1950

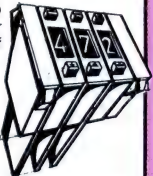
25¢



3-WAY BCD PUSH-BUTTON

3 ganged push button switches with BCD coded outputs: ideal for use in computer circuits, with PLL's, etc. Decimal reading of BCD setting. As used in 2m transceiver kit.

Cat. S-2065



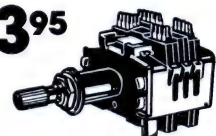
\$15.95

(10 or more \$13.95 ea)

40 CHANNEL CB SWITCH

As used in most Cybernet CB radios. Binary coded output for PLL02A IC: the most commonly used PLL. Ideal replacement part.

Cat. S-6300



(10 or more \$12.50 each)

CHOKES FILTERS & CABLES

RF Chokes

10uH	L-1773	100uH	L-1795
15uH	L-1775	150uH	L-1799
22uH	L-1779	220uH	L-1803
33uH	L-1783	330uH	L-1807
47uH	L-1787	470uH	L-1811
68uH	L-1791	560uH	L-1813
82uH	L-1793	820uH	L-1817

ALL OF THE ABOVE VALUES AT \$1.00ea
10 up .90c

10 up	
1 mH Cat. L-1820	\$1.50
1.5 mH Cat. L-1822	\$1.50
2.5 mH Cat. L-1824	\$2.00
5 mH Cat. L-1826	\$2.40
10 mH Cat. L-1830	\$2.50

DC SMOOTHING CHOKE

Intended for car hi-fi, communications equipment, etc where ignition, alternator or other noise gets in through the power line.

Use external to device either on its own (in series with positive supply) or in conjunction with capacitor for an effective L-C filter.
Cat L-1900 \$2.50

RF BALUN KIT (& audio interference suppressor)

Contains a large, quality balun core (50.8mm dia.) with a quantity of heavy gauge wire, suitable for up to 1kW. Full instructions supplied. Can be used for a number of antenna types up to 30MHz. In most cases they will eliminate RF breakthrough from amateur and CB gear into audio amplifiers. If the speaker leads are wound through the core (as many turns as will fit) the core stops RF energy entering the amplifier in this way.
Cat D-5350 \$14.50
10 up \$11.75



R.F. Toroid Kit

Contains two iron powder cores, enamelled copper wire, application notes, inductance chart and an LCF nomograph. Toroids are used to advantage in Tank circuits, Pi networks, RF transformers, T-Networks, floating tanks, band pass filters, baluns, multiband tuners, antenna loading coils, RF traps, IF networks and oscillator tanks. The two cores provide a useful high Q spectral range of 1MHz through 60MHz.
Cat L-1410 \$4.50
10 up \$4.00



Aerial Rod with Coil

Complete Ferrite rod with pre-wound standard b/c coil. Suits 140-160pF miniature tuning gangs. Ideal for replacements in transistor radios.

Cat. L-0520 \$1.50
10 up \$1.30

Aerial Rods

Approximately 194mm long, and 9mm dia.

Cat. L-1401 \$2.70
10 up \$2.45

Telescopic Antenna

Deluxe antenna, ideal replacement for radios or use in projects. Multi section, tight fitting, chrome plated.

Cat. L-4902 \$4.95
10 up \$4.45

Toroids and Beads

FX115 Ferrite beads
Cat. L-1430 ... 25c ea 10 up 20c
Philips bead 4312-020-31550
Cat L-1432 ... 60c ea 10 up 50c

Ferrite Cores

Packet of 4 Ferrite cores type F16
Cat. L-1302 pkt of 4 95c 10 up 90c
Packet of 4 Ferrite cores type F29
Cat. L-1307 pkt of 4 95c 10 up 90c

Balun Formers

1050/1/F14 (40 to 200MHz)
Cat. L-1340 pkt of 2 \$1.50 10 up \$1.35
1050/2/F29 (10MHz to 220MHz)
Cat. L-1352 pkt of 2 \$1.50 10 up \$1.35

75 OHM VIDEO LEAD

2m quality 75ohm cable fitted with standard RCA plug one end and TV (co-ax) plug the other. For use with many types of VCR/TV combinations, also used in some wall outlet to TV applications. Cat W-1286

'IEC' 2 METRE MAINS LEAD

Approved 3 core 240V mains lead fitted with standard IEC line socket (as used on most computers, vcr's, transceivers, etc, etc) and Aussie 3-pin plug on other.



\$6.95



\$4.50

BNC/BNC VIDEO CABLE

2 metres quality 75 ohm coax fitted with BNC plugs at each end. Suits many of the VCR's available. Why make one and risk shorts when it's already done for you?
Cat W-1285



\$7.95

UNIVERSAL VIDEO CABLE SET

Own a video cassette? Want to dub tapes? You must have one these amazing cable sets. Doesn't matter what type: VHS, Beta, Umatic, Philips ... this suits any! Comes with 2 metre audio/video cable with phono plugs on each end, plus adaptors to suit BNC, UHF (PL-259), DIN, phono, etc. Every video enthusiast should have one! Cat W-1287

\$22.50



WIRING SYSTEM FOR SPEAKERS

What a bargain! 'Invisible' two-wire cable goes behind wallpaper, under carpets, along skirting boards, with as many sockets as you like for speakers. Now you can have your speakers wherever you want them without messy wires everywhere! Kit comes with 10 metres cable plus four plugs & sockets, and full instructions.
Cat W-1288



\$3.35

BULK BUY BARGAIN!

50 OHM CB COAX LEADS

Antenna 'Extension' Lead
1m 50 ohm RG58U co-ax fitted with PL-259 connectors at each end. Ideal for extending CB or HF/VHF amateur transceiver leads to allow antenna to be mounted further away. Cat W-1370

\$4.95

Antenna Lead

Similar to above, but fitted with PL-259 plug one end and lugs on other for connection to a variety of CB/amateur antennas. 4m long.
Cat W-1372

\$3.95

UNIVERSAL MAINS LEAD

Approved mains cable as used in a huge variety of imported audio, radio, video and other entertainment equipment. Two pin mains plug, approx. 2 metres cable and 'figure 8' type two-pin socket. Note: no earth lead! Ideal replacement cable. Cat W-1360

\$3.50

CABLE COILED MICROPHONE CORD

2 metres very flexible microphone cable, with 3 conductors plus shield. The ends of the conductors are pre-tinned and the whole cable is pre-coiled for easy use. Ideal for replacing microphone and headphone cables with appropriate sockets. Cat W-1365.



\$2.75

UHF HELICAL FILTERS

High quality UHF Helical Filters (also known as helical resonators) - as used in our UHF amateur transceiver kit.

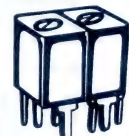
They're miniature low impedance band-pass filters, specifically made for either the UHF amateur band (centre 440MHz) or the UHF CB band (centre 477MHz). Incredibly handy because it's so difficult to wind your own coils for these frequencies: all the hard work is done for you.

Specifications (similar for each except for centre frequency)

Bandwidth: 12MHz min (at -1dB)
Selectivity: 12dB min (Fo+/-30MHz)
Insertion Loss: 3dB max
Impedance: 50 ohms in and out
Size: 15 x 13 x 7mm

\$7.95

10 up \$7.25
440 MHz Cat L-1850
477 MHz Cat L-1860



Pot Core Assemblies



Philips P36 assembly consisting of 2 cup cores and former. Replaces FX2242 and is ideal for the CDI kit. 36mm core diameter.

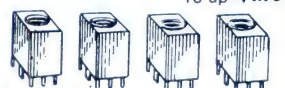
Cat. L-1436 \$6.50
10 up \$6.00

Former to suit FX2242 core
Cat. L-1437 60c
10 up 55c

Slug Tuned IF/OSC Coil Pack

Ideal for experimenters and service technicians. Set comprises 1st, 2nd and 3rd 455kHz standard miniature IF transformers and standard b/c oscillator coil.

Cat. L-0260 \$1.90
10 up \$1.70



Coil Formers & Accessories

5mm former, subminiature (4mm core).
Code 722/1
Cat. L-1010 1-9 45c ea
10 or more 40c ea

6 pin base.
Cat. L-1015 45c ea
10 or more 40c ea



Can to suite above 12.7x12.7 x19mm high. Code 7100
Cat. L-1020 45c ea
10 or more 40c ea



455kHz Ceramic Filter

SFD455B (SF455D) the modern replacement of the IF transformer. Two resonators are coupled by an external capacitance to give maximum selectivity with a flat response. Typical selectivity 20dB min at ± 10 kHz with 3dB bandwidth of ± 4.5 kHz.

Cat. L-1605 1.9 \$2.20 ea
10 or more \$2.00 ea

WIRE & CABLE

HOOK-UP WIRE

FLEXIBLE LIGHT CABLE
10¢/m
100m or more 8¢/m

PVC insulated wire that is ideal for the hobbyist. Ideal for home brew projects etc. 12 individual colours available - saves confusion.

W-2220 Red W-2224 Yellow W-2228 Lt Blue
W-2221 Black W-2225 Green W-2229 Grey
W-2222 Brown W-2226 D Blue W-2230 Cream
W-2223 Orange W-2227 Purple W-2231 White

MEDIUM DUTY
15¢/m
100m or more 12¢/m

Slightly thicker than the above wires, fully tinned and insulated. Available in Red and Black. Red Cat W-2240 Black Cat W-2242

HEAVY DUTY
20¢/m
100m or more 17¢/m

24 x 0.2mm (23/0076). Rated at 240V AC, 7.5 amps. Available in red, black and green. Red Cat W-2260 Black Cat W-2262 Green Cat W-2264

ULTRA HEAVY DUTY
30¢/m
100m or more 25¢/m

32 x 0.2mm (40/0076). Rated at 240V AC, 10 amps. Available in brown and blue. Brown Cat W-2280 Blue Cat W-2282

RAINBOW CABLE

Cat W-2045 \$1.45/m
100m or more \$1.25/m

12 colour coded strands of insulated conductor bonded together in a flat cable. Ideal for wiring looms or intercoms etc. Can be laid under carpets. Can be split and the individual wires used - same rating as W-2220 series of wire.

TELEPHONE-TYPE CABLE

4 CONDUCTOR Cat W-2120 65¢/m
100m or more 55¢/m

12 CONDUCTOR Cat W-2140 \$1.20/m
100m or more 95¢/m

This is the type of wire used by TELECOM Australia for internal telephone wiring. Ideal for intercoms or any other multi-wire circuit. Individually insulated and colour coded. Solid copper conductors, fully tinned for solder connection or good screw connection.

SPEAKER CABLE

LIGHT DUTY
Cat W-2010 20¢/m
100m or more 15¢/m

Ideal cable for use with Hi Fi systems for speaker connections or with intercoms. Twin plastic insulated conductors, insulation marked with a trace to keep speakers correctly polarised.

MEDIUM DUTY
Cat W-2012 25¢/m
100m or more 20¢/m

Ideal cable for connecting speakers to systems of up to 200 watts power. Heavy duty with low resistance for long runs with very low power loss. Colour coded for polarity reference. Conductors 14/0076.

MAINS RATED
Cat W-2020 40¢/m
100m or more 30¢/m

Ideal for use with extension lights, standard lamps etc, also ideal for use with speakers and intercoms if a lower resistance is required. Rated at 240V AC, 7.5A. With white PVC insulation.

SHIELDED AUDIO CABLE

MONO LIGHT DUTY
Cat W-2030 35¢/m
100m or more 30¢/m

PVC covered, light duty, very flexible cable that is ideal for patch cords, small microphones, etc. Colour - Grey.

TWIN SHIELDED
Cat W-2034 55¢/m
100m or more 50¢/m

2 PVC covered twin shielded conductors. Ideal for microphones, audio patch leads, hook-up wiring, etc. Flexible, light duty. Colour coded.

TWIN SHIELDED
Cat W-2036 60¢/m
100m or more 55¢/m

The same as the single conductor audio lead but with two conductors separately shielded in fig. 8 pattern insulation. Ideal for stereo connections. Colour - Grey.

HEAVY DUTY TWIN
Cat W-2037 90¢/m
100m or more 80¢/m

Two conductors individually shielded and colour coded surrounded by a heavy duty outer insulation sheath. Ideal for use where heavy handling could destroy light duty cables i.e. rock groups etc.

4 CORE SHIELDED
Cat W-2038 \$1.30/m
100m or more \$1.00/m

All 4 conductors are individually shielded and covered by grey PVC insulation. Ideal for use with stereo systems that have DIN type connections.

IDC COMPUTER CABLE
Made especially for IDC (insulation displacement connector) applications: flat, multi-strand cables in 4 sizes. (See plugs & sockets pages for IDC fittings).

Type	Cat No	1-9m	10 up
26 way	W-2750	\$3.20	\$2.90
46 way	W-2752	\$3.95	\$3.50
40 way	W-2754	\$5.65	\$5.00
50 way	W-2756	\$6.75	\$6.00

3-CORE FLEX

3 CORE MAINS CABLE
Cat W-2055 60¢/m
100m or more 50¢/m

A standard power cable for use where an earth is required. Each wire is separately insulated and colour coded and all three cables are contained in a plastic sleeve to give double insulation. Rated at 240V AC and 7.5 amps continuous.

FITTED MAINS CORD
Cat W-2057 \$1.95
10 or more \$1.65

12m 7.5A 3 core flex fitted with 3-pin plug on one end: ideal for all mains projects.

COAXIAL CABLE

75 Ω 3C-2V TV COAX
Cat W-2080 45¢/m
100m or more 40¢/m

Designed for TV feeder systems. Cable has excellent dielectric and is suitable for up to 400MHz. It has a 5mm diameter black insulation over braided shield.

50 Ω RG-58 AMATEUR
Cat W-2090 60¢/m
100m or more 50¢/m

For use up to 500MHz making it ideal for the marine radio installation, CB radio, amateur and two-way radio. Flexible with stranded centre conductor and black insulation. Diameter 5mm.

50 Ω RG-8 HEAVY DUTY
Cat W-2095 \$2.25/m
100m or more \$1.95/m

Ideal for long run feeder systems due to its very low loss. Ensures maximum operating range of transmitters. Insulation is coloured black and has a 10mm diameter.

50 Ω RG-213 LOW LOSS
Cat W-2099 \$2.65/m
100m or more \$2.20

For when you want lowest loss (eg long runs) without going to the expense of heliax or similar. RG-213 offers better performance at VHF & UHF than RG-8.

RG-178 MINI 50 OHM TEFLON
1 metre pack \$3.95

Able to handle up to 100 watts at 500MHz due to the Teflon insulation, this also means you can solder directly to the shield braid without melting the insulation. Incredibly small diameter, only 2.5mm! Ideal for wiring into transmitters etc, where space is a premium. High quality. Cat W-2088

TV RIBBON

300 OHM FEEDER
Cat W-2070 22¢/m
100m or more 19¢/m

Suitable for indoor or outdoor use. (Black). 300 ohm feeder ribbon for connecting aerials to TV sets - low loss and maintains perfect balance.

4-CORE FLEX

Cat W-2100 85¢/m
100m or more 75¢/m

Intended mainly for alarm applications where two conductors are used for alarm sensing and two for tamper protection or power supply, ect. Each conductor is 7/020, and individually insulated. Most alarm installations use between 50 & 100m.

6-CORE FLEX

Cat W-2042 \$2.50/m
100m or more \$2.25

Intended mainly for older style rotators which require up to six conductors; also ideal for alarm installations requiring power, tamper and alarm connections.

WIRE PACKS:

The economical way to buy

HOOK-UP WIRE PACK

24 metres in total of 12 different colours (that's 2 metres of each colour) of the 10 x 0.2mm hook-up wire. Ideal for the hobbyist, experimenter etc.

Cat W-4010 \$2.50

RESISTANCE WIRE PACK

Resistance wire suitable for the construction of wire wound resistors, small heater elements, shunts, etc. Also ideal for emitter resistors in high power amplifiers.

Wire size: 28B&S (diameter 0.32mm). Solderable - yes. Resistance 1.852 ohms/ft. Non magnetic, corrosion resistant. Composition: 45% Nickel, 55% Copper. Maximum continuous service temperature: 540 degrees Celsius. Cat W-3200 ... 4 metre length ... 90¢

INSTRUMENT TEST LEAD WIRE PACK

Special 512 strand (YES 512!) very flexible wire that is ideal for test leads or for connection to something that is moving. Very low resistance and only 3mm in diameter. Expensive - yes, but it will last for years. Pack contains 2 metres each of red and black (4 metres total). Cat W-4016 ... 4 metre pack ... \$4.50

SPAGHETTI PACK

Contains 30 lengths of assorted colours and diameters (each length being more than 150mm), that totals over 4.5 metres of spaghetti. Cat W-4040 \$2.75

WIRE WRAPPING PACK

This is a high quality insulated IC wrapping wire now in a convenient 5 metre pack - keep a couple of packs handy, you never know when you may need it! Cat W-4018 ... 5 metre pack ... 95¢

HEATSHRINK TUBING PACK

Make professional terminations. Supplied as a pack of various lengths and sizes and includes (internal diameter) 1.5mm, 2.8mm, 6.3mm, 12.7mm and 19mm. On application of heat from a soldering iron or hair dryer will shrink up to 50% of original size. Retains flexibility after being shrunk. Ideal as 'strain' cord on made up leads. Cat W-4060 \$2.95

Jumbo pack for those long jobs. Contains 4 lengths: Clear 15mm, Blue 10mm, Yellow 7mm, White 5mm, each 1m long. Fantastic value! Cat W-4062 \$8.25

TINNED COPPER WIRE

High quality 25 gram roll of 22 SWG (approx 20 B&S) tinned copper wire. Ideal for PC board links, hard wire jumper leads, chassis wiring, etc. 0.71mm x 8 metres to a roll. Cat W-3022 ... approx. 8 metres ... \$2.20

ENAMELLED WINDING WIRE

Coil winding, motor rewinding, transformer building are no longer a problem with these handy coils of enamelled wire.

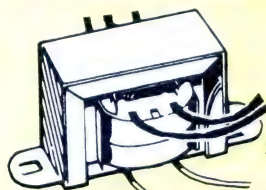
NOTE: where possible this wire will be supplied with "Bicaflux" insulation. Simply heat wire with soldering iron and insulation will flow therefore requiring no stripping.

Gauge B&S	mm	Gauge SWG	Length metres	Nett weight	Cat No	Price
16	1.25	18	8m	100g	W-3116	\$2.95
18	1.0	19	12m	100g	W-3118	\$2.95
20	0.8	21	18m	100g	W-3120	\$2.95
22	0.63	23	24m	100g	W-3122	\$2.95
24	0.5	25	9m	25g	W-3124	\$2.25
26	0.4	27	20m	25g	W-3126	\$2.25
30	0.25	33	50m	25g	W-3130	\$2.25
32	0.2	36	170m	25g	W-3132	\$2.25
36	0.125	40	220m	25g	W-3136	\$2.25

FUSE WIRE

Great for keeping a card of in the fuse box - just in case! Card of 5, 10 and 15 amp fuse wire. Cat W-3180 40¢

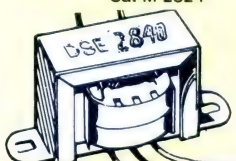
TRANSFORMERS



\$3²⁵
10 up \$2.75

DSE2824

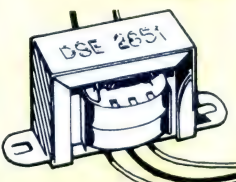
Primary: 240V, 50Hz
Secondary Voltage: 3.5-0-3.5V & 7.5V
Secondary Current: 250mA & 10mA
Terminations: Flying Leads
Cat M-2824



\$4²⁵
10 up \$3.45

DSE2840

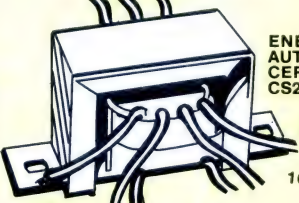
Primary: 240V, 50Hz
Secondary Voltage: 4.5-0-4.5V
Secondary Current: 150mA
Terminations: Flying Leads
Cat M-2840



\$3⁹⁵
10 up \$3.40

DSE2851

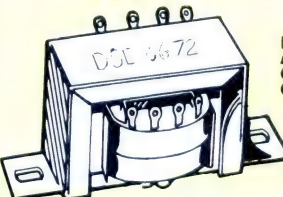
Primary: 240V, 50Hz
Secondary Voltage: 6.3-0-6.3V
Secondary Current: 150mA
Terminations: Flying leads
Cat M-2851



\$5⁹⁵
10 up \$5.10

DSE2155

Primary: 240V, 50Hz
Secondary Voltage: 6.3, 7.5, 8.5, 9.5, 12 & 15V
Secondary Current: 1 Amp
Terminations: Flying Leads
Cat M-2155



\$8⁹⁵
10 up \$8.05

DSE6672

Primary: 240V AC
Tapped Secondary Voltages: 15, 17.5, 20, 24, 27.5, 30 volts
Secondary Current: 1 Amp
Termination: Solder Lugs
Cat M-6672

Energy Authority Fully
Approved

**Low cost
Low profile**

Each transformer has two separate secondary windings which can be wired in series or in parallel. They are fitted with round pin terminations and include connectors. 240V AC primary.



PL12/20VA 2 x 6V@1.7A - 6V@3.4A - 12V@1.7A M-3596
PL15/20VA 2 x 7.5@1.3A - 7.5V@2.6A - 15V@1.3A M-3597
PL18/20VA 2 x 9V@1.1A - 9V@2.2A - 18V@1.1A M-3598
PL24/20VA 2 x 12V@.85A - 12V@1.7A - 24V@.85A M-3599
PL30/20VA 2 x 15V@.69A - 15V@1.3A - 30V@.69A M-3600
PL40/20VA 2 x 20V@.51A - 20V@1A - 40V@.51A M-3601

all models only

10 up \$ 17.95 **\$19⁵⁰ ea**
Fantastic value!

**PCB Mounting
Transformers**

● Mounts directly onto the PCB which makes wiring incredibly simple.

● Two separate secondary windings - can be series or parallel connected. ● Gives 24 volts at 0.21 amp in series or 12 volts at 0.42 amp in parallel. ● Great for hobbyists! Cat M-3590

\$12⁵⁰ 10 up \$11.25

**115V stepdown
transformer for US small
appliances**



\$67⁵⁰

Input 240V AC and secondary voltage 115V AC @ 60VA with 7% regulation. The unit is fully encased and has fuse protection for the output. Heavy duty carrying handle and socket outlet. Weight 2.9kg. Cat M-1156

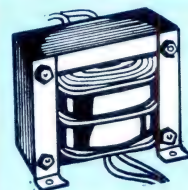
**Why take the risk?
Over - voltage transformer**



IDEAL FOR USE
IN W.A. COUNTRY
AREAS.

\$42⁵⁰

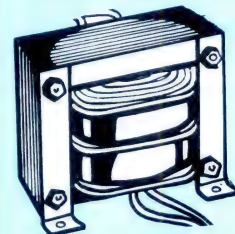
Using 220V equipment on the 240V mains can be dangerous! Or in remote areas (particularly WA!) where mains can go up to 260V, even some 240V equipment is unhappy. Fix the problem with this mains auto transformer. 10% mains voltage reduction, at 240W. Ideal for VCR's! Cat M-1150



\$33⁹⁵
10 up \$27.50

DSE0144

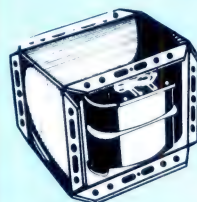
Primary: 240V AC
Secondary: 28-0-28V
Secondary current: 2A
Cat M-0144



\$24⁹⁵
10 up \$22.00

DSE2000

Primary: 240V AC
Secondary Voltage: 18 volts @ 6A
Termination: Flying Leads
Cat M-2000



\$54⁵⁰
10 up \$45.00

DSE2010

Massive 18 volts at 14 amps continuous... ideal for high power rating power supplies, linear amplifiers, etc. etc. Compare our price with what you've had to pay in the past... What a bargain!
● Suits 13.8V 25A pk supplies.
● As used in our VK powermaster kit.
Cat. M-2010

Transistor Audio Transformers

Ideal for transistor audio replacements, good for transistor projects including oscillator circuits, requiring coupling transformers. Miniature size. Model M-0222 - Primary 3k ohm ● Secondary 3k ohm ● Use - Coupling ● Iron Core ● Size 17(l) x 15.5(w) x 15(h) mm.

Cat. M-0222 **\$1.25**
Model M-0216 - Primary 1k ohm ● Secondary 8 ohm ● Use - 350MW.O/P. ● Ferrite Core ● Size 15(l) x 14(w) x 11.5(h) mm.
Cat. M-0216 **\$1.15**

Audio Line Transformer

This transformer has been engineered to cover more than 95% of all PA - BGM applications. Suited to all speaker impedances. Multitapped for use with 100V or 70V lines. 52mm mounting centres.

● Multi purpose matching transformer ● 4 Watts rms rating ● 2, 4, 8, 16 ohm secondary ● 2.5K, 5K ohms primary
Cat. M-1100



\$4⁹⁵
10 up \$4.50

POWER SUPPLIES & PLUG PACKS

Power Supplies

13.8V/4A Peak

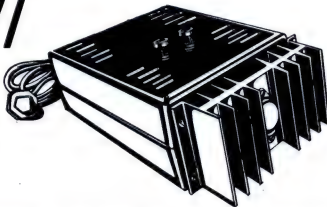
Panther Power! Regulated 13.8 volts supply, ideal for running CB radios as a base station... or any other 'car' equipment from a power point. Makes a great bench supply for test purposes, too. 2 amps continuous rated, with a massive 4 amps peak pulse (suits SSB CB's perfectly). Fully approved supply, with colour coded banana terminals and 2 metres mains cable. Cat M-9545.



\$49⁹⁵

- Housed in high-impact plastic case with massive ventilation for long service.
- Rubber feet to keep stable, eliminate scratching.

13.8V/ 8A Peak



NEW FOR 85

Need more oomph? Try this one: the high power Panther. For the 2m or small HF amateur transceiver, a supply for 'auto' equipment, even a bench supply for service work - you'll go a long way to find a better supply.

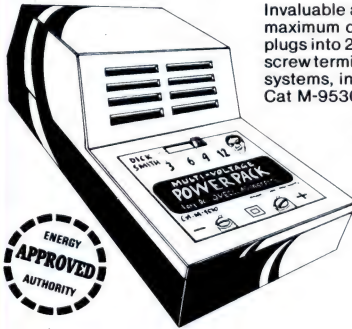
With a 3 amp continuous (or 4A continuous at 75% duty cycle) and a huge 8 amp instantaneous peak rating, it's ideal for those higher current and higher peak demand applications that the above supply can't manage.

- Heavily heatsunk for maximum output
- Colour coded output terminals
- LED indicator also shows overload or short circuit.

\$79⁹⁵

Cat M-9547

3-6-9-12V DC @ 1 amp



Invaluable around the home or workshop. It will give a maximum of 1 amp at 3, 6, 9 and 12 volts DC. Simply plugs into 240V AC power socket - DC connections via screw terminals on front of unit. Ideal for use with alarm systems, intercoms, etc.

Cat M-9530

- Overload protection
- Simple screw terminal connection
- High 1A output

\$22⁵⁰



Protect your computer system with a

Jabel Line Filter

Spikes, surges and sundry other garbage on the mains can spell disaster for your poor computer. Even separate sections of the computer can cause mains hash (eg printer). This deluxe filter virtually eliminates most mains-borne garbage giving your computer a clean line of supply with which to operate. If you're having 'crash' problems with your computer - could be this filter will fix it! Rated at 240 volts, 2 amps. Fully approved by the Electricity Authority.



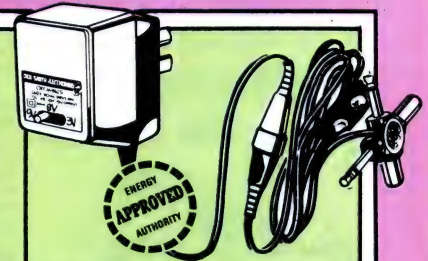
Don't delay! It's only \$125

Cat M-9850



Wow! Save on battery-power with a super-quality DSE Plug Pack!

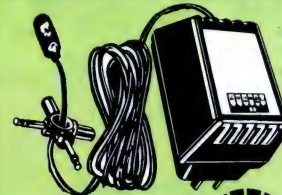
We've one to suit almost all equipment... so switch over to mains power today!



3V-6V-9V DC @ 200mA

This battery eliminator is one of the most superb buys in this catalogue - many thousands have been purchased by people who know how to save money! It is a small plug-in unit that has three output voltages of 3, 6 and 9 volts DC at 200 milliamps - possibly the three most used voltages on battery powered equipment. It is ideal for many battery driven items. Cat M-9525

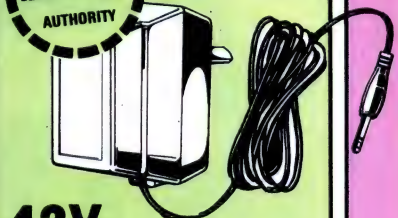
\$12⁵⁰



3-4.5-6-7.5-9-12V @ 300mA

An extremely versatile supply ready for just about any application. Switchable output gives 6 different voltages ranging from 3V to 12V, at up to 300mA. Complete with 5-way connector to suit almost all power sockets in common usage (including 9V battery connectors). Cat M-9526

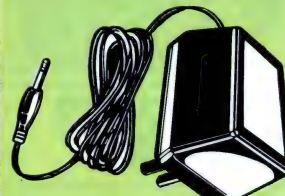
\$14⁹⁵



12V AC @ 500mA

Ideal power supply for projects that require 12V AC at 500mA. Because the whole of the plug-pack is a transformer, you get a much higher current rating than other plug-packs. Rectifiers and filter components can be placed inside the project itself. Cat M-9555

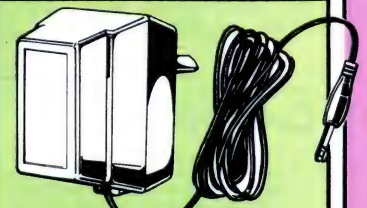
\$15⁹⁵



9V DC @ 600mA

Extra high power - ideal for 9 volt equipment which needs more than the low power-plug packs can provide, (such as cassette recorders etc.) Cat M-9560

\$15²⁵



9V DC @ 200mA

For all equipment requiring 9V DC at a 9V transistor type battery or many other static hobby models that require 9V. Eliminator module simply plugs into a 240V AC power socket. Cat M-9514

\$8⁵⁰



BATTERIES & CHARGERS

Hi-Watt Batteries

Top Savings!



Compare other brands and prices – and see the huge savings on quality Hi-Watt batteries from Dick Smith! Specially imported, factory fresh batteries – just right for all your battery operated devices. And they're available in all popular sizes and styles – right down to the tiny AAA and UM-5 sizes often so hard to get. Because of our huge turnover of batteries, they're always in the freshest possible condition. Next time you need a battery ... try Hi-Watts!

Qty/type	Cat No	Price each	Price 10 up
'D' metal jacket	S-3001	45¢	40¢
'C' metal jacket	S-3002	40¢	35¢
'AA' (penlight)	S-3003	35¢	30¢
'AAA'	S-3004	40¢	35¢
UM5 (R-11)	S-3005	30¢	25¢
216 (9V)	S-3006	85¢	80¢

DSE Alkaline Longlife

The battery bargain! Alkaline batteries last a lot longer than ordinary types ... but you've had to pay the earth for them. Dick Smith Alkaline Longlife batteries last like the others ... but look at the difference in price!

Made especially for Dick Smith by one of Japan's leading battery manufacturers. Pack of two 'AA' size.

Cat S-3281

\$2²⁵

10 or more packs \$1.95 pack



Top Name EVEREADY ...

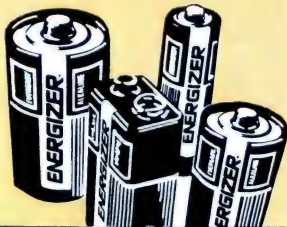
Eveready Red batteries in 5 types. How's your lantern battery?

Qty/type	Cat No.	Price Each	Price 10 up
216 9V	S-3106	\$1.63	\$1.40
276P 9V	S-3210	\$8.49	\$7.80
2362 9V	S-3200	\$8.22	\$7.50
509 6V	S-3240	\$4.20	\$3.90
732 12V	S-3242	\$14.99	\$13.10



Top brand name, top quality! Eveready Alkaline Energizers, recommended for extra heavy duty applications where normal batteries turn up their toes. All normal sizes available; always guaranteed fresh and ever ready!

Qty/type	Cat No.	Price Each	Price 10 up
Pack 2 'AAA'	S-3278	\$3.55	\$3.25
Pack 2 'C'	S-3282	\$3.80	\$3.55
Pack 2 'D'	S-3284	\$4.40	\$3.70
1 x 216 (9V)	S-3286	\$4.70	\$4.45



CHARGETTE

The experts tell you to charge your battery 'a little, but often' for maximum life. This Chargette does just that with a 1A trickle charge that will keep your car battery always ready. Plugs directly into power point, complete with leads and clips.

Cat M-9802

Keep your car battery fresh!

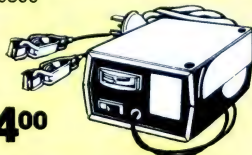


\$26⁰⁰

HIGH POWER CHARGER

This one will get you going – fast. With a high 4A charge rate it will completely charge a dead battery overnight; it could get you going in much less time. Complete with charge meter so you won't overcharge the battery. Top value!

Cat M-9800



\$34⁰⁰

SPECIAL BATTERIES

Look for batteries for specific products under that product eg: Yaesu batteries: Yaesu

Ni Cad Batteries

'AAA' size

At last, you can get 'AAA' re-chargeables! Now all those toys, calculators, etc using this popular size can benefit from the much lower overall cost of Nicads. 1.2 volts, 180mAh rating.

\$2²⁵ Cat S-3305
10 up \$2.10



'C' size

Use to replace standard 'C' size batteries. Higher capacity (1.2Ah) for longer use. Single cell.

\$5²⁵ Cat S-3301
10 up \$4.70



'D' Size

Also rated at 1.2Ah but has same physical size as standard 'D' battery. Used in models, toys, etc.

\$5²⁵ Cat S-3303
10 up \$4.70



'AA' (penlight) size

By far our most popular NiCad cell – we sell almost as many of these as ordinary AA batteries! Despite their initial higher price! Nicads work out much cheaper in the long run because they can be re-charged up to 200 times! Rated at a massive 500mA/h, this battery is suitable for almost all devices using standard AA batteries. 1.2 volts.

\$2⁰⁰ Cat S-3300
10 up \$1.80



'216' Size

At last! A true 9V NiCad in the popular '216' (transistor radio) size. Don't be fooled by most models: they're really 7.2V! This one gives full output! 100mA rating. Cat S-3308

\$18⁹⁵ 10 up \$17.00



No leak, rechargeable

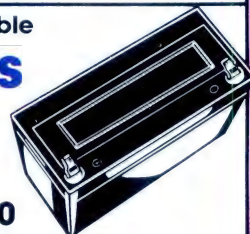
Gel Cells

12V 2.6 Ah

Now there's no need to mess around with motorcycle or other batteries for your burglar alarms, emergency supplies, etc etc. You get all the advantage of conventional lead-acid batteries – high output, etc – with virtually none of the hassles. No leaks, no mess.

Rated at 12V, 2.6Ah. Keep it trickle charged via the alarm or other mains supply (ask us for a circuit!) Fits perfectly inside our 'Security Centre' (see alarm pages). Measures 135 x 95 x 35mm, fitted with quick connect terminals.

Cat S-3320
\$28⁵⁰



12 V 1.2 Ah

A mini Gel Cell intended mainly for alarm applications (fits inside alarm cases nicely) with enough oomph for most applications. Colour-coded spade connectors for easy connection, size 100 x 45 x 55mm. As used in EA Home Burglar Alarm kit. Cat S-3315



\$22⁵⁰

WATCH BATTERIES

Equivalent Guide

Now you can get your watch/clock batteries at low cost!

	JIS	Eveready	Mallory	Hi Watt
Cat S-3292	\$3.45 G10	389	10L12	S-120
Cat S-3293	\$4.50 G13	S76	10L14	S-200
		303		
		357		
Cat S-3295	\$3.25 G12	386	10L24	S-150
		S41		
Cat S-3296	\$2.45 G8	391	10L130	
Cat S-3299	\$2.40 G3	392	10L125	S3-140
		S312		

CALCULATOR BATTERIES

3 volt Lithium calculator batteries in two popular sizes. Suit a large range of scientific and statistical calculators. Blister packed for freshness.

\$3⁴⁵ each

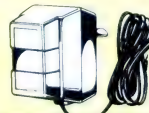
E-CR2025 Cat S-3330 E-CR2032 Cat S-3331

NI CAD CHARGER

Most devices these days allow for an external charger to be plugged in to charge NiCads (usually a 2.5mm socket). This charger is ideal for all NiCad packs from 6 to 10 cells (ie 7.2 to 12 volts). Fully approved by Electricity Authority.

Cat M-9517

\$13⁹⁵



CHARGING CABINET

Can't charge NiCads inside the device? No problems: this incredibly versatile charging cabinet suits virtually all sizes and types of NiCad cell. Has a test meter to indicate charge and 5 LED indicators to show batteries are connected. Fully approved, complete with plug-pack.

Cat M-9519

\$24⁵⁰



CHARGER PLUG PACK.

What a great idea! Two – part charger consists of plug – pack plus a separate snap – on battery holder. Charges four penlight (AA) Nicads easily and simply.

Cat M-9520

\$10⁹⁵



MAINS PRODUCTS, FUSES ETC.

3 PIN PLUG

\$1.30



Cat P-5400
The standard Australian 3-pin AC plug - it has locking collar to hold cable tight and push fit cover to main body.

3 PIN PIGGY-BACK PLUG

\$2.20



Standard 3-pin plug with 3 pin socket as well - doubles up one power point. Cat P-5405

3 PIN PLUG - SIDE ENTRY

\$1.35



Standard 3 pin AC plug with cable entry on the side - ideal for using with awkward equipment. Cat P-5402

SUPPRESSOR PLUG

\$6.35



Cat P-5425
Standard 3 pin AC plug, with capacitors fitted to reduce unwanted pops and crackles from audio equipment.

LINE SOCKET

\$2.65



Cat P-5410
Ideal for making up extension cords - standard 3 pin AC socket.

SURFACE SOCKET

\$2.50



Cat P-5415
Standard 3 pin AC socket that can be screwed to boards or walls - ideal for workshop use.

DOUBLE POWER POINT

\$8.50

10A RATING



Replace old single outlets with a double - much more convenient! Cat P-5560

BLANK PLATE

\$1.95



Same size as power point, but blank: ideal for gap-filling when you move points, switches etc. Cat P-5535

STANDARD MOUNTING BOX

\$1.95



Cat P-5531
Mount power points, plates, etc. on any surface including brick.

WALL BOARD CLIP

95¢



Can be mounted from the front. Cat P-5530
Mount power outlets, switch plates, on any cavity wall (other than brick) without the need for a mounting box.

3 PIN IEC LINE PLUG

\$2.95



As used in huge range of computer, amateur, entertainment equipment. Female line socket, standard IEC pattern. Cat P-5580

3 PIN IEC CHASSIS SOCKET

\$2.95



Male chassis socket, as used with above plug. 3 pin vertical IEC pattern. Cat P-5585

ARCHITRAVE SWITCH

\$3.50



Cat P-5570
Standard architrave switch - can be used to replace old, worn out units in your home. Positive action switching.

LINE SWITCH

\$3.35



High impact plastic moulded switch for insertion in any cord for remote on/off. Ideal for putting on/off switch in a floor standing lamp. Cat P-5515

JUNCTION BOX

\$3.30



Cat P-5625
Standard electrical wiring junction box - with connectors.

LIGHT SOCKET

\$1.75



Cat P-5510
Light socket for bayonet mount lamps. Ideal replacement for light fittings. Comes in white plastic.

SPOTLIGHT HOLDER

\$6.25

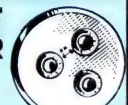


Edison Screw holder to suit PAR38 and other ES bulbs. Can be adjusted over 30 degrees for exact positioning. (Suits coloured bulbs). Cat P-5620

POWER POINT SAFETY TESTER

\$4.95

Cat P-5300



Check newly installed power points, old homes, etc. Just plug in and light pattern reveals any faults.

DOUBLE ADAPTOR

\$2.75



Standard 3 pin AC plug into 2 AC sockets enabling you to use 2 appliances on one outlet. Cat P-5440

EXTENSION CORD

\$4.25

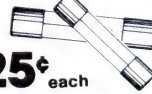


Cat P-5590
3 metres of 3 core cable, already fitted with plug and socket. 7.5A rating.

FUSES

Wide range of fuses in both popular styles: M-205 mini (approx 20 x 5mm) and the popular 3AG (app. 32x6mm). Remember, the lower the current rating of the fuse you use, the greater the protection afforded.
All fuses 'fast blow' type for greatest protection.

25¢



10 up of any one type
20¢ each

THERMAL FUSES

Handle 10A at 250V. Two types to choose from:
96°C operating Cat S-4490
139°C operating Cat S-4491

HANDY FUSE WIRE PACK

Great for keeping a card of in the fuse box - just in case! Card of 5, 10 and 15 amp fuse wire.
Cat W-3180

40¢



3AG TYPE

100mA	S-4449
150mA	S-4451
250mA	S-4453
350mA	S-4455
500mA	S-4457
1A	S-4461
1.5A	S-4465
2A	S-4467
3A	S-4469
5A	S-4471
7.5A	S-4473
10A	S-4477
15A	S-4479
20A	S-4481
25A	S-4485
30A	S-4487
35A	S-4487

M-205 TYPE

250mA	S-4412
500mA	S-4415
1A	S-4421
2A	S-4423
5A	S-4425

(10 or more 90¢)

FUSE HOLDERS

Chassis or PCB fuse holders

40¢ Cat S-4258



(10 or more 30¢)
Easy to mount fuseholders in both popular sizes to suit 3AG or M205 fuses. Suit 3AG: Cat S-4257 Suit M205:

Bayonet holders (3AG)

90¢ (10 up 85¢)



Chassis or panel mounting fuse holder, accepts standard 3AG fuse. 13mm mounting hole required. Cat S-4206

In-line Holders (3AG)

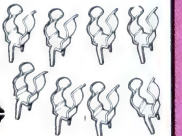
95¢



Protection for car radios, stereos, transceivers, etc. All plastic casing, takes standard 3AG fuse, with spring loaded contacts for positive connection. Complete with 600mm lead at no extra charge. Cat S-4277 (10 or more 90¢)

3AG Fuse clips (Pack of 8)

These fuse clips are ideal for mounting on PC boards providing flexibility and extremely good value.
Cat H-1700



95¢ pckt of 8

NEW FOR 85 4-WAY POWER BOARD

\$12.99



Now one power point becomes four power points! Just plug in this four-way adaptor and you've solved all those dangerous double adaptor problems. And you don't have to pay for an electrician to fit a new point. Complete with cable. Cat P-5613

CHILD-PROOF PROTECTOR

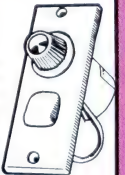
45¢



AC sockets are normally placed in a position whereby young children have access. Stop their prying fingers by placing these plastic safety plugs into the outlet when not in use. Very hard for children to remove. Cat P-5420

LIGHT DIMMER

Easy to install light dimmer - simply replaces existing light switch in wall cavity. Set the mood you want by the amount of light in the room. AND you can save on power bills, too. This dimmer comes with full instructions for easy installation: is already fitted with internal radio frequency suppression to reduce or eliminate interference. Handles up to 500 watts of incandescent lamps (not suitable for fluorescents).
Cat Y-1112



\$9.75

LUMI-TAB LUMINOUS ADHESIVE TABS

Can't find that switch or power point in the dark? Try these: 'Lumi tabs' glow in the dark, put them around the switch etc and you won't lose it! Pack 4 self adhesive tabs.
Cat P-5350



\$1.99

NEW FOR 85 INTERNATIONAL TRAVELLER'S MAIN SOCKET ADAPTOR

Having trouble with power points overseas? Here's the answer! A neat little adaptor that converts our 3-pin plug to virtually anything used in the world. One piece (so you won't lose bits!). Uses active/neutral pins only: does not connect earth.
Cat P-5652



SUPER VALUE AT \$16.95

ROTARY BLOWER FAN

Getting a bit hot under the collar? Use one of these superb rotary fans: FANTastic for any device that needs forced air cooling. And they can be mounted to suck or blow. Standard size: 120mm square x 40mm deep, with mounting holes on 75mm radius. The same Cat Y-8500 fan as you'd pay \$\$\$ more for elsewhere!

\$22.50

(5 up \$19.95)

MINI ROTARY FAN

For those small devices which simply cannot fit the larger fan above. Complete with finger guard, can be installed for suck or blow. 240V motor, draws just 60mA! And the size is as tiny as the price: 80 x 80 x 25mm. Mounting holes on 51mm radius.

\$22.50

(5 up \$19.95)

Cat Y-8505

PCB'S & ACCESSORIES



ETCHING KIT

Incredible value: a pack consisting of Ferric Chloride, Dalo PC pen, resin (flux), a sample of PC board plus instructions – at less than the price of the etchant and pen on their own! And the Ferric comes in this handy 500ml bottle.

Cat H-5650..... **\$8.90**



EXPERIMENTERS PCB KIT

Complete with 150 x 100mm blank board, detailed instruction manual, template, chemicals and tools. This fully imported set comes in a plastic case which can be used as an etching tray.

Cat H-5660..... **\$11.75**



FLUX REMOVER

At last a can of flux remover. Fantastic for service work, technicians and for cleaning up messy solder jobs! 400 gram spray can. Cat N-1055

\$7.95

PC RESIST PEN

Ideal for that 'one off' board where the complexity or expense of photographic processes are not warranted. Pen contains a resist solution which is simply drawn onto the PCB in the pattern required. Board is then etched in normal way. It's quick and it's easy! Famous 'Dalo' brand as used by engineers everywhere. Cat T-5170

\$2.65

BLANK PRINTED CIRCUIT BOARDS

Pre-cut high quality PC boards with permanently bonded copper on one side - available in bakelite or heavy duty fibreglass.

Bakelite: 150x75mm	Cat. H-5500	\$1.25	\$1.10
Bakelite: 150x150mm	Cat. H-5505	\$1.95	\$1.75
Bakelite: 300x300mm	Cat. H-5510	\$6.50	\$6.00
Fibreglass: 150x75mm	Cat. H-5540	\$1.95	\$1.75
Fibreglass: 150x150mm	Cat. H-5545	\$4.95	\$4.50
Fibreglass: 300x300mm	Cat. H-5550	\$8.95	\$8.00

ALUMINIUM SHEET

Blank aluminium sheet ideal for making up front panels, folding into small boxes, or general hobbyist work. 18 gauge:

Cat H-2560..... 305x305mm..... **\$3.45**

CLEAR ACRYLIC SHEET

Ideal for using over panels, etc - makes your project look really professional. Or use for inspection panels, protection devices, etc. 3mm thick, size is a very useful 150mm long x 50mm wide.

Cat H-5450..... **\$1.15**
10 up..... **\$1.00**

SPOT FACE CUTTER



Remove copper quickly and neatly from all printed circuit board and Vero boards.

Cat. H-5176..... **\$3.95 ea**

PC PIN CONNECTORS



Fits the H-5590 board pins. Has many uses.

Cat. H-5592..... **Pkt 25 \$1.65 pack**

PRINTED MOUNTING STRIP



A handy 47 way mounting strip for resistors, capacitors and other components. Packs them in neatly. Terminals are numbered for easy circuit identification.

Cat. H-6610..... **\$1.90 ea**
10 up..... **\$1.70 ea**

VERSA STRIP BOARD

As H-5612 board, but with pre-cut short tracks making it ideal for multi IC work. Plated strips. Packed in a plastic sheath for protection.

2.54mm spacing x 76mm x 153mm
Cat. H-5616..... **\$3.95 ea**
10 up..... **\$3.50 ea**

PRINTED STRIPBOARDS

DICK SMITH SPECIFICATIONS - PLATED STRIPS - ALPHA NUMERIC GRID

The most versatile board of the lot! Etched copper strips are predrilled and plated ready for solder. The alpha numeric grid facilitates positive pin identification.

2.54mm spacing x 76mm x 153mm
Cat. H-5612..... **\$3.65 ea**
10 up..... **\$3.30 ea**

2.54mm spacing x 76mm x 76mm
Cat. H-5614..... **\$1.90 ea**
10 up..... **\$1.70 ea**

A quality plated copper strip board similar to the English Vero board. Continuous predrilled stripping on a high grade insulator. Packed in plastic sheath to assure you an untarnished, easy-to-solder surface.

2.54mm spacing x 95mm x 304mm
Cat. H-5112..... **\$5.45 ea**
10 up..... **\$4.90 ea**

PC PINS



These pins push through 2.54mm pitch matrix board or Vero board to form solder terminals on both sides of the board.

Cat. H-5590..... **Pkt 50 pins \$1.90 pack**

MATRIX BOARD

Tough phenolic board with punched holes. Ideal for prototypes, bread boards, science or hobby projects.

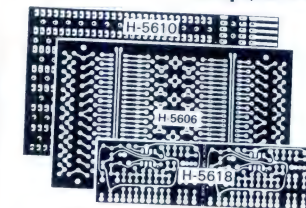
2.54mm spacing x 76mm x 76mm
Cat H-5310..... **\$1.70 ea**
10 up..... **\$1.55 ea**

DIL BOARD



Specially made for Dick Smith Electronics to take up to 5 DIL IC's up to 16 pin. Don't 'birdnest' anymore - makes assembly easier. Quality pre-punched board with deep etched copper lands.

170mm x 60mm
Cat. H-5602..... **\$2.30 ea**
10 up..... **\$2.10 ea**



PLUG-IN IC BOARD

Fantastic plug-in printed circuit board. 2.54mm pin spacing to accept directly up to 14 x 14 pin or 16 pin IC's or up to 20 'Mini-Dip' IC's. Lands are silver plated and a 24 way 2.54mm plug is etched into one end of the board so that it can be used with a 24 way edge connector. An excellent high quality board for the hobbyist or engineer.

2.54mm spacing x 60(w) x 100(l)mm
Cat. H-5610..... **\$2.25**
10 up..... **\$2.05 ea**

DESIGN BREADBOARD

This is an extremely useful board etched and punched in such a unique pattern that it will accommodate almost all types of integrated circuits and transistor packages as well as passive parts. Each board has over 500 holes punched on 2.54mm grid and over 200 separate silver plated lands as well as in-built buss bars. It will even take the wide 24, 28, 36 and 40 pin DIL packages as well as the 8, 14 and 16 pin packages.

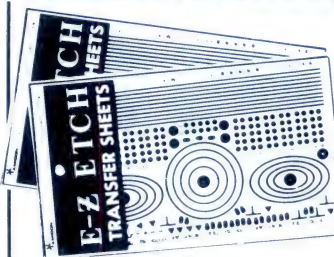
Size: 2.54mm spacing x 80mm x 127mm
Cat. H-5606..... **\$2.95 ea**
10 up..... **\$2.70**

OP-AMP EXPERIM. PCB

Another very useful design for the experimenter: suits 741 type op-amps, with provision made for just about all circuit variations: input, feedback, compensation and power supply components are all catered for. Ideal for one offs. Dual circuits

Cat H-5618..... **\$4.50 ea**
10 up..... **\$4.10 ea**

PC BOARD TRANSFERS



The EZ way to make one-off PCB's. Dry transfer sheets enable you to 'draw' your pattern direct on the copper and the transfers act as resist. 6 sheets of transfers per pack, consisting of IC pads, component pads, lines, circles, junctions, arrows, bends, etc. You can also use these to make 1:1 PCB artwork on film, ready for reversal with Scotchcal H-5690 film. Resist is effective with most types of etchant.

Cat. H-5656..... **\$9.75 per pack**

PANEL LETTERING SET

Each pack contains hundreds of words, letters, numbers and symbols for quick easy labeling of electronic equipment. These are transfer sheets that are easily applied by burnishing.



Size 1 (3.1mm high) Black lettering
Cat. N-1800..... **\$8.25**
Size 2 (2.3mm high) Black lettering
Cat. N-1804..... **\$8.25**
Size 2 (2.3mm high) White lettering
Cat. N-1806..... **\$8.25**
10 or more..... **\$7.50**

FERRIC CHLORIDE ETCHANT

Now supplied in a great new no-spill 500ml bottle of working solution (Ferric Chloride). No more fiddling around with beads and hot water! (Replacement for etchant in kits above left)

Cat H-5652..... **\$4.60**

NEGATIVE PHOTO RESIST

The easy way to make professional quality PC boards in your own home (or prototypes in industry). Uses a standard negative of the PCB and forms an image on exposure to UV light. The image is developed to form the 'tracks' of the PCB, ready for etching. Full instructions provided with the resist.

Resist: 50 ml bottle, enough for approx. 1500 sq cm of pcb.
Cat H-5722..... **\$6.25**
Developer: 50ml working strength solution developer for negative resist. Enough for entire contents of 50ml resist bottle.
Cat H-5726..... **50ml \$8.50**

POSITIVE PHOTO RESIST

Similar to above system, but this is a positive working polyvinyl compound which uses a positive film (ie, the tracks are represented as black and the unwanted copper area clear). This means that you can use 1:1 tapes & pads, etc on a piece of clear film for one off or prototype pcb making, a very economical method of doing so.

Resist: 50ml bottle, enough for approx. 1500 sq cm of pcb.
Cat H-5720..... **50ml \$7.95**
Developer: 70 grams of developer crystals which make up to 2 litres of positive developer (enough for 50ml positive resist).
Cat H-5724..... **70g \$3.95**



Make your own PCB's & panels - it's easy with these aids from Dick Smith Electronics.

Photosensitive Reversal Film

You can use this film to reproduce pc patterns, dial scales, etc. Ready for use on photo resist (see above) or Scotchcal aluminium panels. Film is opaque to UV (orange emulsion). Size is 25 x 30cm, supplied with sheet of drafting film for you to prepare pc pattern or scale on using Letraset, ink, pads, etc.
Cat H-5690..... **\$7.95 per sheet**

Photosensitive Aluminium Sheet

Self adhesive aluminium sheet with either red or black photo-sensitive emulsion. When developed, exposed areas (ie, clear areas on film) remain while rest is removed. A fully professional quality panel can be made in less than 10 minutes! Sheet size 25 x 30cm. Supplied with full instructions & polyester film sheet.
Red Emulsion: Cat H-5692..... **\$8.95 per sheet**
Black Emulsion: Cat H-5694..... **\$9.95 per sheet**

Developer:
50ml bottle developer for any of the Scotchcal range.
Cat H-5696..... **\$1.75**



Want to make fully professional quality panels, scales, etc in just a few minutes? Or even copy magazine pcb patterns so you can photographically reproduce them? You need Scotchcal - a range of easily managed photosensitive products ideal for the hobbyist to use with a minimum of effort. There's a polyester film for copying scales, pcb patterns, etc, and a choice of either red or black coloured aluminium sheet to make your panels from.

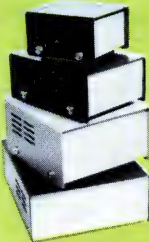
PROJECT BOXES

Metal

METAL CABINETS

Beautifully made cabinets to suit a huge variety of projects, especially those with meters, controls, etc which need to be mounted on the front panel. They consist of an aluminium base, slots, and self-tapping screws complete with cup washers. All-in-all a case you'd be proud to put your prestige projects into. They come in an attractive two-tone finish.

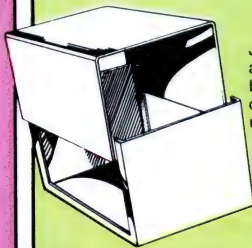
	Ea	10 up
102 x 56 x 83mm Cat H-2741	\$3.95	\$3.65
150 x 61 x 103mm Cat H-2742	\$4.95	\$4.50
150 x 76 x 134mm Cat H-2743	\$5.95	\$5.40
185 x 70 x 160mm Cat H-2744	\$6.95	\$6.30



ALUMINIUM BOXES

Just the shot for those weekend projects that get left lying around! Put them in an economical aluminium box... The boxes come in two pieces which slide together - they even come with screws to hold them together! Versatile and very useful - and in a wide range of sizes. Natural finish.

	Ea	10 up
110 x 51 x 70mm Cat H-2300	\$2.65	\$2.50
104 x 60 x 46mm Cat H-2305	\$2.30	\$2.10
127 x 102 x 76mm Cat H-2320	\$3.75	\$3.40
133 x 76 x 54mm Cat H-2325	\$3.20	\$2.90
152 x 132 x 103mm Cat H-2330	\$4.75	\$4.30
180 x 158 x 118mm Cat H-2335	\$7.75	\$7.00



INSTRUMENT CASES

The professional look for your instrument projects. Made of Marvplate steel with aluminium front and rear panels, these cases even have smart handles to make them look just like commercially built units. There's one just right for your project!

	Ea	10 up
203 x 102 x 254mm Cat H-2455	\$22.95	\$21.00
228 x 76 x 305mm Cat H-2465	\$24.00	\$21.00



ALL-STEEL PROJECT CASE



Two-part case ideal for all your small instruments, etc. Twin 'U' construction, top is slotted for ventilation. Size 160 x 130 x 50mm. Finished in Blue with metallic base. Cat H-2762

Value at **\$6.85** 10 up **\$6.25**

19in RACK MOUNTING CASE

Quality black instrument case fits standard 19 inch racks, overall they're 42.5 x 25 x 14cm. Supplied flat, assembly takes just a couple of minutes. Heavy gauge (3mm) front panel; top and bottom pre-punched for ventilation.

Cat H-2481 **amazing value! \$49.95** 10 up **\$45**



DIECAST ALUMINIUM BOXES

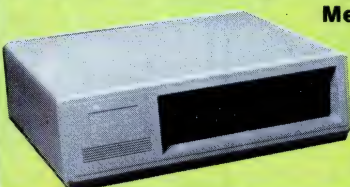
Precision die-cast boxes have always been expensive, but these boxes prove you don't have to pay through the nose! English & Australian made, and you save a fortune over inferior models! These are the ones with channelled walls for easy PCB mounting - and they're ideal for RF circuits because the lid forms a very effective screen. They're also great for circuits involving heat - remember diecast aluminium makes a great heatsink. And these boxes will withstand incredibly high temperatures: up to 600 degrees C! Complete with screws



	Ea	10 up
190 x 60 x 110mm Cat H-2201	\$12.50	\$11.50
150 x 50 x 80mm Cat H-2206	\$ 8.75	\$ 8.00
120 x 40 x 65mm Cat H-2211	\$ 5.50	\$ 5.00
100 x 25 x 50mm Cat H-2221	\$ 3.95	\$ 3.65

For the computer hobbyist

Metal Case-suit IBM Projects

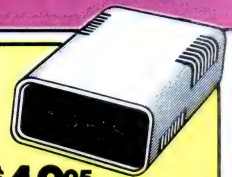


Superb quality beige steel case takes twin drives, pc, etc. Pre-cut back panel with 8 slots, fan, 9 input/output sockets etc. Measures 490 x 390 x 145mm Cat H-2490

\$115 10 up **\$99 ea**

Plastic

This precision instrument case, exclusive to Dick Smith Electronics has a specially designed vent system to allow for free circulation of air. Its unique snap together design means that no screws are required. With front and back panels included this case is ideal for small projects. Size 95 x 145 x 45 mm. Cat H-2503



\$10.95 10 up **\$9.50**



10 up **\$12.95**
\$11.95

A top quality heavy duty instrument case which is just perfect for power supply kits etc. Top and bottom air vents and front and back panels are included. Complete with removable screw-in rubber feet, this is one of the strongest plastic cases ever available. Size 200 x 145 x 75mm. Cat H-2504

10 up **\$13.95**
\$12.30

A superb case for all 'instrument' type projects, and many other besides. Case splits apart for ease of working, comes complete with 4 rubber feet and assembly screws. Amazingly versatile allowing for various PCB mounting positions, front & rear panel are moulded plastic for ease of working (they can be replaced with aluminium panel if required). Size approx. 200 x 160 x 65mm. Cat H-2505

INSTRUMENT/EQUIPMENT CASE

Designed for use with our UHF transceiver kit (K-3600) but superb for a large range of instruments, communication equipment, projects, etc. Features removable front and rear panels, easy PCB mounting. Provision for mounting bracket, too. Size 210 x 175 x 55 mm. Cat H-2520



\$13.95

10 up **\$11.50**

MINI PROJECT CASE

Moulded case for small projects. Complete with 'matrix' style assembly board, lid has flange mounts. Case size 66 x 46 x 30mm. Ideal for car projects! Cat H-2765

10 up **\$2.70** **\$2.95**



INSTRUMENT CASE

What a case! It will make any grotty project look a million dollars! With multi-way tilting bail to hold case at any angle, has rubber feet too! Dress up your project. Buff coloured, size 210(w) x 270(d) x 73(h). Cat H-2525

\$29.95

POWER SUPPLY CASE

Heavy slotting makes this the ideal power supply case - or other heat generating projects. Includes both front and rear panels, slot system makes for easy pcb mounting. 130 x 130 x 75mm. Cat H-2516

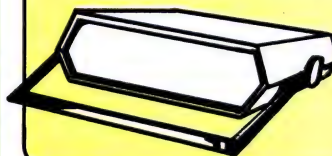
10 up **\$7.25** **\$7.95**



THE CASE!

Magnificent! Everything you could want in a project case is here PCB mounting slots, PCB mounting posts, transformer mounting posts, ventilation slots, speaker (sound) slots... everything! A superb case for any project (many commercial designs, too!) Size a huge 260 x 190 x 80mm. Cat H-2507

10 up **\$17.95** **\$19.95**



Dick Smith ZIPPY BOXES!

There is only one genuine 'Zippy' box - the one with the all-round deep ribbing. Don't be fooled by inferior copies - this is the one used by the major electronics magazines because of its versatility. Insist on the one and only - genuine - Zippy Box from Dick Smith!

More projects are built in genuine Dick Smith 'Zippy Boxes' than any other case. And the reason is simple: they're so versatile! From the tough moulded case with its deep ribbed sides, to the close-fitting aluminium lid with screws supplied - for ease of use and versatility you cannot beat a genuine Zippy Box. The

ribbed sides are ideal for mounting PCB's without worrying about screws - and the PCB can be mounted either lengthwise or across the box. These are the boxes used by beginners in the Fun Way into Electronics projects - and thousands of other projects.

Small - UB5 (28 x 54 x 83mm) Cat H-2755

\$1.95 (10 up **\$1.75**)

Medium - UB3 (41 x 68 x 130mm) Cat H-2753

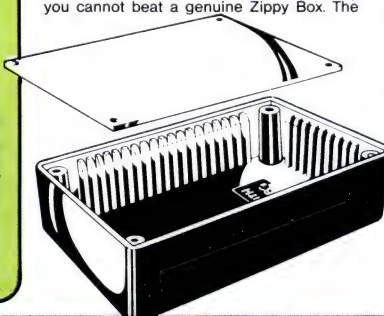
\$2.45 (10 up **\$2.10**)

Large - UB-1 (50 x 90 x 150mm) Cat H-2751

\$2.95 (10 up **\$2.60**)

Giant - UB2 (60 x 113 x 196mm) Cat H-2752

\$4.45 (10 up **\$3.75**)



DATA SECTION

The following 30 pages of data are included with our compliments to the hundreds of thousands of hobbyists, technicians, amateurs, computer buffs, service personnel, engineers, etc who have come to regard the Dick Smith Electronics Catalogue as not just a place to find the best in electronics . . . but information as well.
Thank you for your support over the years. We hope you will find this information useful.

The staff of Dick Smith Electronics.

BIPOLAR TRANSISTORS

TYPE	CASE	POL MAT	V _{ce}	V _{cb}	I _C mA	V _{ces} @ I _C	H _{fe} @ I _C mA	MHz Ft @	I _C mA	P _{tot} mW	USE	COMPARABLE TYPES
AC126	TO-1	PG	12	32	100		140 2	1.7 10		500	Audio driver	2N406
AC127	TO-1	NG	16	32	500		105 50	1.5 10		340	Audio O/P	AC187
AC128	TO-1	PG	16	32	1000	0.6 1A	60-175 300	1 10		1W	Audio O/P	AC188
AC132	TO-1	PG	12	32	200	0.35 200	115 50	1.3 10		216	Audio O/P	AC188
AC187	TO-1	NG	15	25	1000	0.8 1A	100-500 300	1 10		1W	Audio O/P	AC127
AC188	TO-1	PG	15	25	1000	0.6 1A	100-500 300	1 10		220	Audio O/P	AC128
AD161	PT1	NG	20	32	3000	0.6 1A	80-320 500	0.02 300		4W	Audio Amp.	AD165, 2N1218, 2N1292
AD162	PT1	PG	20	32	3000	0.4 1A	80-320 500	0.015 300		6W	Audio Amp.	AD143, AD152, AD147
AF116	TO-7	PG	15	32	10		150 1	75 1		50	H.F. Amp.	AF135, AF136, 2N3127
AS215	TO-3	PG	60	100	10A	0.4 10A	20-55 1A	0.2 1A		30W	H.C. Sw.	OC28
AS218	TO-3	PG	32	100	10A	0.4 10A	30-110 1A	0.22 1A		30W	H.C. Sw.	OC36
BC107	TO-18	NS	45	50	100	0.2 10	110-450 2	300 10		300	S.S. Amp.	BC207, BC147, BC182
BC108	TO-18	NS	20	30	100	0.2 10	110-800 2	300 10		300	S.S. Amp.	BC208, BC148, BC183
BC109	TO-18	NS	20	30	100	0.2 10	200-800 2	300 10		300	Low Noise S.S. Amp.	BC209, BC149, BC184
BC109C	TO-18	NS	20	30	100	0.2 10	420-800 2	300 10		300	Low Noise High Gain	BC209C, BC184C, BC149C
BC157	SOT-25	PS	45	50	100	0.25 10	75-260 2	150 10		300	S.S. Amp.	BC177, BC307, BC212
BC158	SOT-25	PS	25	30	100	0.25 10	75-500 2	150 10		300	S.S. Amp.	BC178, BC308, BC213
BC159	SOT-25	PS	20	25	100	0.25 10	125-500 2	150 10		300	S.S. Amp.	BC179, BC309, BC214
BC177	TO-18	PS	45	50	100	0.25 10	75-260 2	150 10		300	S.S. Amp.	BC157, BC307, BC212
BC178	TO-18	PS	25	30	100	0.25 10	75-500 2	150 10		300	S.S. Amp.	BC158, BC308, BC213
BC179	TO-18	PS	20	25	100	0.25 10	125-500 2	150 10		300	S.S. Amp.	BC159, BC309, BC124
BC182(L)	SOT-30	NS	50	60	200	0.25 10	100-480 2	150 10		300	S.S. Amp.	BC107, BC207, BC147
BC183(L)	(TO-92/74) SOT-30	NS	30	45	200	0.25 10	100-850 2	150 10		300	S.S. Amp.	BC108, BC208, BC148
BC184(L)	(TO-92/74) SOT-30	NS	30	45	200	0.25 10	250-850 2	150 10		300	Low Noise High Gain	BC109, BC209, BC149
BC207	TO-106	NS	45	50	100	0.25 10	110-220 2	150 10		300	S.S. Amp.	BC107, BC182, BC147
BC208	TO-106	NS	20	25	100	0.25 10	110-800 2	150 10		200	S.S. Amp.	BC108, BC183, BC148
BC209	TO-106	NS	20	25	110	0.25 10	200-800 2	150 10		200	Low Noise High Gain	BC109, BC184, BC149
BC213(L)	SOT-30	PS	30	45	200	.25 10	80-400 2	200 10		300	S.S. Amp.	BC308, BC158, BC178
BC214(L)	(TO-92/74) SOT-30	PS	30	45	200	.25 10	80-400 2	200 10		300	S.S. Amp.	
BC327	TO-92 (VAR)	PS	45	50	800	0.7 500	100-600 100	100 10		800	O/P	2N3638
BC328	TO-92 (VAR)	PS	25	30	800	0.7 500	100-600 100	100 10		800	O/P	BC327, 2N3643
BC337	TO-92 (VAR)	NS	45	50	800	0.7 500	100-600 100	200 10		800	O/P	2N3642
BC338	TO-92 (VAR)	NS	25	30	1000	0.7 500	100-600 100	200 10		800	O/P	BC337
BC546	TO-92 (VAR)	NS	80	80	100	0.6 100	125-500 2	300 10		500	S.S. Amp.	
BC547	TO-92 (VAR)	NS	45	50	100	0.6 100	110-800 2	300 10		500	S.S. Amp.	BC107, BC207, BC147
BC548	TO-92 (VAR)	NS	30	30	100	0.6 100	110-800 2	300 10		500	S.S. Amp.	BC108, BC208, BC148
BC549	TO-92 (VAR)	NS	30	30	100	0.6 100	200-800 2	300 10		500	Low Noise Small Sig.	BC109, BC209, BC149
BC549C	TO-92 (VAR)	NS	30	30	100	0.6 100	420-800 2	300 10		500	Low Noise High Gain	BC109C, BC149C
BC556	TO-92 (VAR)	PS	80	80	100	0.65 100	75-500 2	150 10		500	S.S. Amp.	
BC557	TO-92 (VAR)	PS	45	50	100		110-330 2	150 10		500	G.P. Small Sig.	BC157, DS557
BC558	TO-92 (VAR)	PS	30	30	100		75 2	150 10		500	G.P. Small Sig.	BC158, DS558
BC559	TO-92 (VAR)	PS	30	30	100		125-600 2	150 10		500	G.P. Small Sig.	BC159
BC635	TO-92(74)	NS	45	45	1A	0.5 500	40-250 150	130 500		1W	Audio O/P	BC639
BC636	TO-92(74)	PS	45	45	1A	0.5 500	40-250 150	130 500		1W	Audio O/P	BC640
BC639	TO-92(74)	NS	80	100	1A	0.5 500	40-160 150	130 50		1W	Audio O/P	MU9610, TT801
BC640	TO-92(74)	PS	80	100	1A	0.5 500	40-160 150	50		1W	Audio O/P	MU9660, TT800
BCY70	TO-18	PS	40	50	200	0.5 50	50 10	250 50		350	G.P.	BC212
BCY71	TO-18	PS	45	45	200	0.5 50	100-600 10	200 50		350	G.P.	BC212
BCY72	TO-18	PS	25	25	200	0.5 50	50 10	200 50		350	G.P.	BC213
BD137	TO-126	NS	60	60	1A	0.5 500	40-160 150	250 500		8W	G.P. O/P	BD139
BD138	TO-126	PS	60	60	1A	0.5 500	40-160 150	75 500		8W	G.P. O/P	BD140
BD139	TO-126	NS	60	100	1A	0.5 500	40-160 150	250 500		8W	G.P. O/P	40409
BD140	TO-126	PS	80	100	1A	0.5 500	40-160 150	75 500		8W	G.P. O/P	40410
BD262	TO-126	PS	60	60	4A	2.5 1.5A	750 1.5A	7 1.5A		36W	High Gain Darl. O/P	BD266
BD263	TO-126	NS	60	80	4A	2.5 1.5A	750 1.5A	7 1.5A		36W	High Gain Darl. O/P	BD267
BD266A	TO-220	PS	80	80	8A	2 3A	750 3A	7		60W	High Gain Darl. O/P	
BD267A	TO-220	NS	80	100	4A	2 3A	750 3A	7		60W	High Gain Darl. O/P	
BD681	TO-126	NS	100	100	4A		500» 4A	1		40W	Darlington O/P	BD263
BD682	TO-126	PS	100	100	4A		750» 1.5A	1		40W	Darlington O/P	BD263
BDY20	TO-3	NS	60	100	15A	1.1 4A	20-70 4A	1 4A		115	Power O/P	2N3055
BF115	TO-72(28)	NS	30	50	30		45-165 1	230 1		145	V.H.F. Amp.	
BF167	TO-72(28)	NS	40	25			26 4	350 4		130	T.V. I.F. Amp.	
BF173	TO-72(28)	NS	25	40	25		92 7	550 5		230	T.V. I.F. Amp.	
BF178	TO-39	NS	115	185	50		20 30	120 10		600	T.V. Video Amp.	BF336
BF179	TO-39	NS	115	250	50		20 20	120 10		600	T.V. Video Amp.	BF338
BF180	TO-72(25)	NS	20	30	20		13 2	675 2		150	U.H.F. Amp.	BF200
BF184	TO-72(28)	NS	20	30	30		75-750 1	300 1		145	H.F. Amp.	
BF185	TO-72(28)	NS	20	30	30		34-140 1	220 1		145	H.F. Amp.	BF195
BF194	SOT-25/1	NS	20	30	30		65-220 1	260 1		250	H.F. Amp.	
BF195	SOT-25/1	NS	20	30	30		35-125 1	200 1		250	H.F. Amp.	BF185
BF199	TO-92	NS	25	30	25		37» 7	550		500	H.F. Amp.	BF180
BF200	(VAR)2	NS										
BF336	TO-72(25)	NS	20	30	20		15 3	650 3		150	V.H.F. Amp.	BF180
BF337	TO-39	NS	180	185	100		20-60 30	130		3W	Video Amp.	
BF338	TO-39	NS	200	300	100		20-60 30	130		3W	Video Amp.	
BF469	TO-126	NS	250	250	50		50 25	60		1.8W	G.P. High V. Amp.	
BF470	TO-126	PS	250	250	50		50 25	60		1.8W	G.P. High V. Amp.	
BFR90	SOT-37(2)	NS	15	20	25		25-250 14	5GHz 14		180	Wide Band Amp.	
BFR91	SOT-37(2)	NS	12	15	35	0.3 30	25-250 30	5GHz 30		180	Wide Band Amp.	
BFY50	TO-39	NS	35	80	1A	0.2 150	30 150	60 50		2.86W	G.P.	
BFY51	TO-39	NS	30	60	1A	0.35 150	40 150	50 50		2.86W	G.P.	
BFY52	TO-39	NS	20	40	1A	0.35 150	60 150	50 50		2.86W	G.P.	
BFY90	TO-72(25)	NS	30	30	25		25-125 2	1.3GHz 25		200	U.H.F. Amp.	

BIPOLAR TRANSISTORS

TYPE	CASE	POL MAT	V _{ce}	V _{cb}	I _C mA	V _{ces} @ I _C	H _{fe} @ I _C mA	MHz Ft @	I _C mA	P _{tot} mW	USE	COMPARABLE TYPES
BUX80	TO-3	NS	400		10A	1.5 5A		8		100W	Deflection, High current Sw. G.P. Power S.S. Amp.	BC107, BC207, BC147
DS547	TO-92 (VAR)	NS	45	50	100	0.6 100	110-800 2	300 10	500		S.S. Amp.	BC108, BC208, BC148
DS548	TO-92 (VAR)	NS	30	30	100	0.6 100	110-800 2	300 10	500		Low Noise Small Sig.	BC109, BC209, BC149
DS549	TO-92 (VAR)	NS	30	30	100	0.6 100	200-800 2	300 10	500		S.S. Amp.	BC177, BC307, BC212
DS557	TO-92 (VAR)	PS	45	50	100	0.25 100	75-260 2	150 10	300		S.S. Amp.	BC178, BC308, BC213
DS558	TO-92 (VAR)	PS	25	30	100	0.25 100	75-500 2	150 10	300			
MJ802	TO-3	NS	90	100	30A	0.8 7.5A	25-100 7.5A	2 1A	200W		High Power O/P	
MJ2501	TO-3	PS	80	80	10A	2 5A	1000 5A		150W		Darl. O/P	MJ2955
MJ2955	TO-3	PS	60	70	15A	1.1 4A	20-70 4A	4 500	115W		High Power O/P	2N4908, 2N4909, 2N5871
MJ3001	TO-3	NS	80	80	10A	2 5A	1000 5A		150W		Darl. O/P	
MJ4502	TO-3	PS	90	100	30A	0.8 7.5A	25-100 7.5A	2 1A	200W		High Power O/P	
MJ15003	TO-3	NS	140	140	20A		25-150	2	250W		High Power O/P	
MJ15004	TO-3	PS	140	140	20A		25-150	2	250W		High Power O/P	
MJE340	77-03/199-04	NS	300		500	0.75 100	30-240 50		20W		G.P. High V. Power	
MJE350	77-03/199-04	PS	300		500	0.77 100	30-240 50		20W		G.P. High V. Power	
MJE2955	90-05/199-04	PS	60	70	10A	1.1 4A	20-100 4A	2 500	75W		G.P. Power	TIP2955
MJE3055	90-05/199-04	NS	60	70	10A	1.1 4A	20-100 4A	2 500	75W		G.P. Power	TIP3055
MRF629	79-03	NS	16	36	400		20-200 100		5W		R.F. Power UHF	
MRF660	TO-220 AB	NS	16	36	2.4A		20-160 250		25W		R.F. Power UHF	
MU9610	152	NS	30	40	2A	0.4 1.5A	80-400 350	70 250	1W		O/P	TT801
MU9611	152-01	NS	30	40	2A	0.4 1.5A	80-400 350	70 250	1W		O/P	TT801
MU9660	152	PS	30	40	2A	0.4 1.5A	80-400 350	70 250	1W		O/P	TT800
MU9661	152-01	PS	30	40	2A	0.4 1.5A	80-400 350	70 250	1W		O/P	TT800
NSD106	TO-202(35)	NS	100	140		.2-.9 100	50-150 100	80 50			Driver - O/P	
NSD206	TO-202(35)	PS	100	100		.2-1 100	50-150 100	150 50			Driver - O/P	
OC26	TO-3	PG	30	50	3.5A	0.7 3A	30-100 1A	0.3 500	32W		G.P. O/P	AD149
OC28	TO-3	PG	60	100	10A	0.4 10A	20-55 1A	0.2 1A	30W		H.C. Switch	ASZ15
OC44N	TO-1	PG	5	15	10		45-225 1	7.5 1	85		R. F. Amp.	AF125, AF135, AF172
OC45	GT-3	PG	5	15	10		25-125 1	3 3	85		R. F. Amp.	AF132, AF185, AF196
OC70	GT-3	PG	10	30	50		30 5	0.5	125		G.P. Amp.	AC121, AC126, 2N1190
OC71	GT-3	PG	10	30	50		30-75 3	0.6	125		G.P. Amp.	AC126, 2N2429
OC72	GT-6	PG	16	32	250		45-120 10	.35	165		Audio O/P	AC122, AC125, AC162
OC74N	TO-1	PG	10	20	300	0.6 300	60-150 50	0.1	550		Audio O/P	AC125, AC180, AC192
OC75	GT-3	PG	10	30	50		60-130 3	0.1	125		G.P. Amp.	AC173, AC192
TIP31B	TOP-66	NS	80	80	3A	1.2 3A	20 500	3 500	40W		Power Amp - Sw.	
TIP32B	TOP-66	PS	80	80	3A	1.2 3A	20 500	3 500	40W		Power Amp - Sw.	
TIP2955	TOP-3	PS	70	100	15A	1.1 4A	20 4A	0.8	90W		Power Amp - Sw.	MJE2955
TIP3055	TOP-3	NS	70	100	15A	1.1 4A	20 4A	0.8	90W		Power Amp - Sw.	MJE3055
TT800	TO-39(Mod)	PS	60	60	1A		40-120 100	100	800		Audio Driver - Sw.	TT797, NSD206, 2N4030
TT801	TO-39(Mod)	NS	60	80	1A		40-120 150	60	800		Audio Driver - Sw.	TT798, NSD106, 2N3019
2N301	TO-3	PG	32	40	3A		50 1A	0.2 1A	11W		Audio O/P	AT1138, OC26
2N706A	TO-18	NS	15	25	200		20 10	200	300		High S. Sw.	
2N2222A	TO-18	NS	40	75	800	1 500	75 10	300 20	500		High S. Sw.	
2N2904A	TO-39	PS	40	60	600	1.6 500	40-120 150	200 50	600		High S. Sw.	
2N2905A	TO-39	PS	60	60	600	1.6 500	100-300 150	200 50	600		High S. Sw.	
2N2926	TO-92(74)	NS	25	25	100		150 2	100	200		G.P.	BC108 etc
2N3019	TO-39	NS	80	140	1A	0.5 500	50-100 500	100 50	800		H.F. Amp.	
2N3053	TO-39	NS	40	60	700	1.4 150	50-250 150	100 50	2.86W		G.P. Switch	BD137
2N3054	TO-66	NS	55	90	4A	0.1 200	25 500	0.8 200	25W		Audio O/P	TIP31B
2N3055	TO-3	NS	60	90	15A	1.1 4A	20 4A	0.8 1A	115W		O/P - Sw.	BDY20
2N3563	TO-106	NS	12	30	50		20-200 8	600 8	200		R.F.-I.F. Amp. & Asc.	BF173
2N3564	TO-106	NS	15	30	100	0.3 20	20-500 15	400 15	200		R.F.-I.F. Amp. & Asc.	BF167
2N3565	TO-106	NS	25	30	50	.35 1	150-600 1	40 1	200		Low Level Amp.	BC108, BC208
2N3566	TO-105	NS	30	40	200	1 100	150-600 10	40 30	300		G.P. Amp. & Sw.	BC183
2N3567	TO-105	NS	40	80	500	.25 150	40-120 1	60 50	300		G.P. Amp. & Sw.	BC337
2N2568	TO-105	NS	60	80	500	0.25 150	40-120 1	60 50	300		G.P. Amp. & Sw.	
2N3569	TO-105	NS	40	80	500	0.25 150	100-300 1	60 50	300		G.P. Amp. & Sw.	
2N3638	TO-105	PS	25	25	500	0.25 50	30 50	100 50	300		G.P. Amp. & Sw.	BC327
2N3638A	TO-105	PS	25	25	500	0.25 50	100 50	150 50	300		G.P. Amp. & Sw.	BC558
2N3640	TO-106	PS	12	12	80	0.2 10	30-120 10	300 10	200		Saturated Switch	
2N3641	TO-105	NS	30	60	500	0.22 150	40-120 150	250 50	350		G.P. Amp. & Sw.	BC337
2N3642	TO-105	NS	45	60	500	0.22 150	40-120 150	250 50	350		G.P. Amp. & Sw.	BC337
2N3643	TO-105	NS	30	60	500	0.22 150	100-300 150	250 50	350		G.P. Amp. & Sw.	BC337
2N3644	TO-105	PS	45	45	500	1 300	115-300 50	200 20	300		G.P. Amp. & Sw.	BC327
2N3645	TO-105	PS	60	60	500	1 300	115-300 500	200 20	300		G.P. Amp. & Sw.	
2N3702	TO-92(74)	PS	25	40	200	0.25 50	60-300 50	100 50	360		G.P. Amp. & Sw.	BC213
2N3866	TO-39	NS	30	55	400		10-200 50	500 50	1W		V.H.F. Amp.	
2N3904	TO-92	NS	40	60	200		100-300 1mA		310		Low Level Amp.	BC167A, BF194
2N3905	TO-92	PS	40	40	200	0.4 50	50-200 1mA	200 20	310		G.P. Amp. & Sw.	
2N3948	TO-39	NS	20	36	400		15 50	700 50	1W		V.H.F. Amp.	
2N4030	TO-39	PS	60	60	1A	0.5 500	15 100	260 100	800		G.P. Amp. & Sw.	
2N4250	TO-106	PS	40	40	100	0.25 10	250-400 0.1	50	200		Low Level Amp.	BC559
2N4258	TO-106	PS	12	12	50	0.5 50	30-120 10	700 10	200		Saturated Sw.	
2N4292	TO-92	NS	15	30	50	0.6 10	20 3	600 4	200		Saturated Sw.	
2N4403	TO-92	PS	40	40	600		100-300 10		310		G.P.	BC307A, 2N2904
2N4429	TO-39	NS	20	40	400		10-200 100	500 50	1W		V.H.F. Amp.	
2N5589	MT-71C	NS	18	36	600		5 100	175 3W	15W		H.F. Mobile R.F.	
2N5590	MT-72C	NS	18	36	2A		5 250	175 10W	30W		H.F. Mobile R.F.	
2N5591	MT-72C	NS	18	36	4A		5 500	175 25W	70W		H.F. Mobile R.F.	
2N5871	TO-3	PS	60	60	7A	1 4A	20-100 2.5A	4 250	100W		Power Transistor	2N5872, 2N4908, MJ2955
2N6084	MT-72C	NS	18	36		6A	5» 1A	175» 40W	80W		VHF Output	B40-12
2SB367	PT-1	PG	25	25		1A	45-70 500	0.5	4W		Audio Output	AD162
2SC1096	TO-202-R	NS	30	40		2A	45-250 1A	60	10W		G.P. Output	2SC1098, TIP31
2SC1306	TOP-66	NS	65	65		3A	40-200 500	300	12W		H.F. Output	2SC2166
2SC1307	TOP-66	NS	70	70		8A	20-150 2A	150	25W		H.F. Output	2SC1969
2SC1674	TO-92	NS	20	30	20	0.3 10	40-180 1	600 1	250		VHF Amp.	
2SC1969	TOP-66	NS	30	60		6A	10-180 10	150	20W		H.F. Output	2SC1307
2SC2166	TOP-66	NS	75	75		4A	35-180 100				H.F. Output	2SC1306
40250	TO-66	NS	50	50	4A	1.5 1.5A	25 100	1	29W		Power Transistor	2N3054
40408	TO-5	NS	80		700	1.4 150	40-200 200	100	1W		Power Transistor	BC639
40409	TO-39(H)	NS	80		700	1.4 150	50-250 150	100	3W		Power Transistor	BD139
40410	TO-39(H)	PS	80		700	1.4 150	50-250 150	100	3W		Power Transistor	BD140

SEMICONDUCTOR OUTLINES

SMALL SIGNAL



TO-92 (71, 72, 74)

PIN	72 (STD)	FET
1	C	G
2	B	S
3	E	D

PIN	74	FET
1	B	S
2	C	G
3	E	D



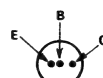
TO-72 (23, 25, 28)

PIN	T (25)	FET N (25)
1	E	S
2	B	D
3	C	G
4	GND	CASE

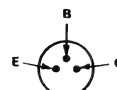
PIN	T (28)	FET P (23)
1	B	S
2	E	G
3	C	D
4	GND	CASE



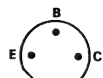
TO-18



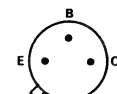
GT-3, GT-6



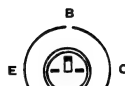
TO-1



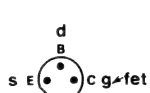
TO-105



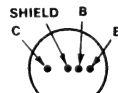
TO-5 (04)



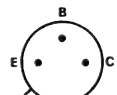
TO-39 (mod)



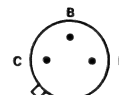
TO-106



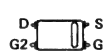
TO-107



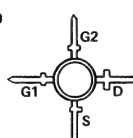
TO-39



79-03



206(B)



SOT-103

Note: Pin connections may vary with different source of supply, check with your dealer if any doubt exists.

FETS

(FET)



TO-92 VAR. 1



TO-92 VAR. 2



SOT-30



SOT-25

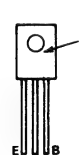


SOT-25/1

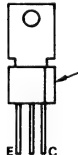


TO-72 (2)

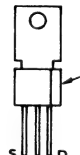
POWER



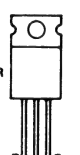
TO-126



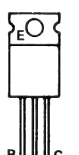
TO-202



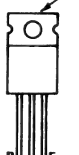
TO-202FET



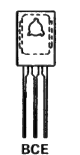
TO-220



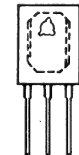
TO-220AB



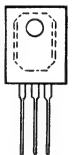
TOP-66



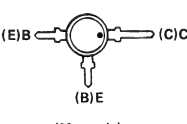
77-03



90-05



199-04

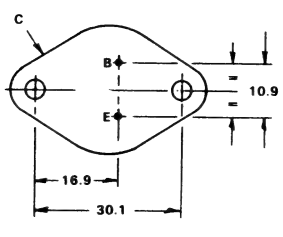


SOT-37 (2)

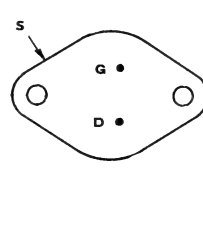
POWER



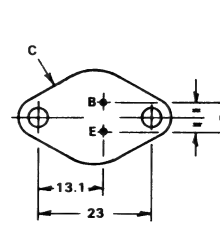
TOP-3



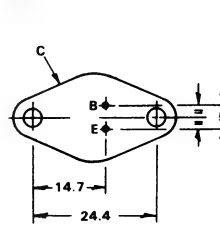
TO-3



TO-3FET

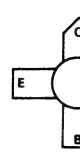


PT-1

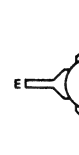


TO-66
DIMENSIONS IN MILLIMETRES

RF POWER



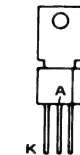
MT-72C



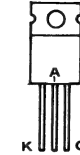
MT-71C



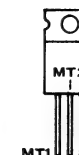
TO-92 SCR



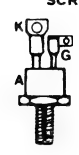
TO-202 SCR



TO-220 SCR



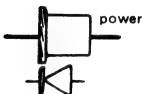
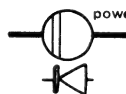
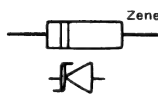
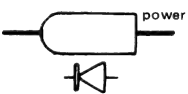
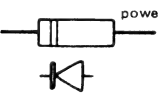
TO-220 TRIAC



TO-48 SCR

SCRs & TRIACS

DIODES



BIPOLARS
E : EMITTER
B : BASE
C : COLLECTOR
NG : NPN GERMANIUM
PG : PNP GERMANIUM
NS : NPN SILICON
PS : PNP SILICON

FETS
S : SOURCE
G : GATE
D : DRAIN
N/CH : N CHANNEL
P/CH : P CHANNEL

G.P. : GENERAL PURPOSE
S.S. : SMALL SIGNAL
SW : SWITCH
O/P : OUTPUT

R.F. : RADIO FREQUENCY
H.F. : HIGH FREQUENCY
V.H.F. : VERY HIGH FREQUENCY

ST - 4 ASYMMETRIC TRIGGER DIODE

VS1 - 14 - 18V
VS2 - 7 - 9V
IS1 - 80uA
IS2 - 160uA
VF1 - 7 - 10V
VF2 - 1.6 (max)
IOFF1 - 100nA
IOFF2 - 100nA
PAV - 350mW
If(max) - 200mA

BR - 100 DIAC

VS - 28 - 36V
VSYM/VRRM - 3V
IS(max) - 100uA
Δ VT - 6V @ 10mA

DS2646 UNIJUNCTION TRANSISTOR (UJT) NEGATIVE BASE

PTOT - 300mW
VB2-E - 30V
VB2-B1 - 35V
R(B-B1)O - 9k ohms (max)
VB1(PK) - 3V
IE(PK) - 5uA
η - 0.56 - 0.75
I(VAL) - 4mA min.

2N6027/D13T1 PROGRAMMABLE UNIJUNCTION TRANSISTOR

VA-K - 40V (max)
IT - 2A (max)
I(VAL) - 50uA
IS(max) - 2uA @ 1.5V

FETS

FETS	Case	BV _{GSS}		V _G S(OFF)				ID _{SS} (mA)				Y _f s(umhos)			P _{tot} mW	Use/Comments
		V @	I _G (uA)	Min	Max @	V _D S	ID(nA)	Min	Max @	V _D S	V _G S	Min	Max @	V _D S		
BF245B	TO-92 Var 1	30	1	.5	8	15	10	6	15	15	0	3000	6500	15	300	N/CH Junction Audio to H.F.
BF981	SOT-103	>6		2.5		10	20uA	4	25	10	0	14000	typ		225	N/CH Dual Gate MOS. VHF Amp.
BFW10	TO-72(25)	30						8	20	15	0		6500		300	N/CH Junction Audio to H.F.
BFW11	TO-72(25)	30						4	10	15	0		6500		300	N/CH Junction Audio to H.F.
BFW61	TO-72(25)	25						2	20	15	0		6500		300	N/CH Junction Audio to H.F.
MEM631	W-25	+/-6	+/-10		4	15	200uA	5	30	15	0	1600	typ	15	500	N/CH Dual Gate MOS VHF Amp.
MFE131	TO-72(2)	+/-6	+/-10		4	15	200uA	4	30	15	0	8000	20000	15	300	N/CH Dual Gate MOS VHF Amp.
MPF102	TO-92(72)	25	10	.5	8	15	2	2	20	15	0	2000	7500	15	310	N/CH Junction — VHF
MPF103	TO-92(72)	25	1		6	15	1	1	5	15	0	1000	5000	15	310	N/CH Junction — Audio Sw.
MPF104	TO-92(72)	25	1		7	15	1	2	9	15	0	1500	5500	15	310	N/CH Junction — Audio Sw.
MPF105	TO-92(72)	25	1		8	15	10	4	16	15	0	2000	6000	15	310	N/CH Junction — Audio Sw.
MPF106	TO-92(72)	25	1	.5	4	15	10	4	10	15	0	2500	7000	15	310	N/CH Junction — RF
MPF121	206(B)	+/-6	+/-10		4	15	200uA	5	30	15	0	10000	20000	15	500	N/CH Dual Gate MOS. VHF Amp.
MPF131	262	+/-6	+/-10		4	15	200uA	3	30	15	0	8000	20000	15	350	N/CH Dual Gate MOS. VHF Amp.
2N4342	TO-92(72)	25	10		5	10		12	30	10	0		6000	10	180	P/CH Junction — Audio Sw.
2N4360	TO-92(72)	40	10	.5	6	15	100	1	5	15	0	1000	5000	15	310	P/CH Junction — Audio Sw.
2N5457	TO-92(72)	25	1	.5	6	15	10	1	5	15	0	1000	5000	15	310	N/CH Junction — Audio Sw.
2N5458	TO-92(72)	25	1	1	7	15	10	2	6	15	0	1500	5500	15	310	N/CH Junction — Audio Sw.
2N5459	TO-92(72)	25	1	2	8	15	10	4	9	15	0	2000	6000	15	310	N/CH Junction — Audio Sw.
2N5484	TO-92(72)	25	1	.3	3	15	10	1	5	15	0	3000	6000	15	310	N/CH Junction — VHF
2N5485	TO-92(72)	25	1	.5	4	15	10	4	10	15	0	3500	7000	15	310	N/CH Junction — VHF
2N5486	TO-92(72)	25	1	2	6	15	10	8	20	15	0	4000	8000	15	310	N/CH Junction — VHF
3SK40	TO-72(2)	+/-6	+/-10		4	15	200uA		25	15	0	8000		15	250	N/CH Dual Gate MOS. VHF Amp.
40673	TO-72(2)	+/-6	+/-10	-2	typ	15	200uA		35	15	0	12000	typ	15	330	N/CH Dual Gate MOS. VHF Amp.

POWER FETS		V _{DSS} (min) V @ I _D		I _D (max) A		V _{DS(on)} /I _D V/A V _{GS} = 10V		V _{GS} (off) I _D = 1mA min V max		Power Diss T _C = 25°C W		Use/Comments
Case												
VN46AF	TO-202 F	40	10uA	2.0		3.0/1.0		0.8	2.0	12.5		N-chan Enhancement Mode VMOS FET
VN66AF	TO-202 F	60	10uA	2.0		3.0/1.0		0.8	.20	12.5		N-chan Enhancement Mode VMOS FET
VN86AF	TO-202 F	80	10uA	2.0		4.0/1.0		0.8	2.0	12.5		N-chan Enhancement Mode VMOS FET
2SJ48	TO-3 F	-120	-10mA	-7		-12/-7 (V _{GD} =0)		-0.15	-1.45	100		P-chan Enhancement Mode MOS FET
2SJ49	TO-3 F	-140	-10mA	-7		-12/-7		-0.15	-1.45	100		P-chan Enhancement Mode MOS FET
2SJ50	TO-3 F	-160	-10mA	-7		-12/-7		-0.15	-1.45	100		P-chan Enhancement Mode MOS FET
2SK133	TO-3 F	120	10mA	7		12/7		0.15	1.45	100		N-chan Enhancement Mode MOS FET
2SK134	TO-3 F	140	10mA	7		12/7		0.15	1.45	100		N-chan Enhancement Mode MOS FET
2SK135	TO-3 F	160	10mA	7		12/7		0.15	1.45	100		N-chan Enhancement Mode MOS FET

DIODES

TYPE	CASE	VR	IF (mA)	Cd (pF)	VF @ IF (mA)	IR (uA) @ VR	Trr (nS)	Use/Comparable Types
Germanium								
AA119	DO-7	30	100	1.2	2.2 10	150 30	70	AM/FM Detection Point Contact
OA47	DO-7	25	110	3.5	0.45 10	100 25		Gold Bonded G.P. Switching
OA90	DO-7	20	45		1.5 10	450 20		G.P. Point Contact OA70, OA80
OA91	DO-7	90	50		1.9 10	180 75		G.P. Point Contact OA71, 79, 81
DSOA91	DO-7	50	30	1	1 5	200 10		G.P. OA91, 1N60
OA95	DO-7	90	50		1.5 10	110 0.75		G.P. Point Contact
Silicon								
BA100	DO-7	60	90	25	0.96 10	10 60		G.P. - Alloyed
BA102	DO-7	20		20-45	Cd ratio 1.4 @ 4/10 V/VV			Variable Capacitance
BA114	DO-7		20		0.7 1			Bias Stabilizer
BA234/4	DO-35	20	100	12	1 100	0.1 15		UHF Sw.
BAW62	SOD-27	75	200	2	0.75 5	5 75	4	High Speed Silicon Sw.
BB119	DO-35	15		20-25 @ 4V	Cd Ratio w1.3			Varicap - Replaces BA102
BB122	DO-35	30		12 @ 3V	Cd Ratio 5.2	0.05 28		Varicap V.H.F. U.H.F.
OA200	DO-7	50	160	25	0.96 10	0.1 50		Small Signal - Alloyed
OA202	DO-7	150	160	25	0.96 10	0.1 150		Small Signal - Alloyed
1N914A	DO-35	75	75	4	1 10	5 75	4	Small Signal Sw. 1N4148
1N4148	DO-35	75	200	4	1 10	0.025 20	4	Small Signal Sw. 1N914A
1N4448	DO-35	75	300	4	1 100	0.025 6	4	G.P. Silicon Sw. 1N4148
5082-2800	DO-7	70	15	2	0.41 1	0.2 50	0.1	Schottky (Hot Carrier) UHF Detector, Mixer, Switch

SCR'S

TYPE	CASE	V _{DRM}	I _T (r.m.s.) (A)	I _{GT} (mA)	V _{GT}	P _G (AV) (W)	I _H (mA)	dv/dt (V/uS)	Comments (25°C)
C103B	TO-92	200	.8	.2 max	.8 max	.01	5 max	20 typ.	(R _{GK} = 1k)
C106Y	TO-202	30	4	.2 max	.8 max	.1	5 max	8 typ.	"
C106D	TO-202	400	4	.2 max	.8 max	.1	3 max	8 typ.	"
C122D	TO-220	400	8	25 max	1.5 max	.5	3 max	50 typ.	(Gate o/c)
C122E	TO-220	500	8	25 max	1.5 max	.5	30 max	50 typ.	"
C164D	TO-48	400	16	40 - 80	2 typ.				
C168D	TO-48	800	16	40 - 80	2 typ.				
S4008	TO-220	400	8	25 max.	1.5 max	.5	30 max	50 typ.	(Gate o/c)
S6008L	TO-220	600	8	25 max	1.5 max	.5	30 max	50 typ.	"
TIC126E	TO-220	500	8	20 max	1.5 max	.5	40 max	100 typ.	"

TRIAC'S

TYPE	CASE	V _{DRM}	I _T (r.m.s.) (A)	I _{GT} (mA)	V _{GT}	P _G (AV) (W)	I _H (mA)	dv/dt (V/uS)	(25°C)
BT139-500	TO-220	500	16	50	1.5(T _J = 25°C)	.5	30	100 min.	(Gate o/c)
Q-4006L4	TO-220	400	6	75 max. all modes	2.5 max. all modes	.9	60 max.	100 typ.	"
SC141D	TO-220	400	6	50 "	2.5 "	.5	50 max.	100 typ.	"
SC146D	TO-220	400	10	50 "	2.5 "	.5	50 max.	150 typ.	"
SC151D	TO-220	400	15	50 "	2.5 "	.5	50 max.	250 typ.	"
TIC246D	TO-220	400	16*		2.5 "		50 max.		(*case temp. below 70°)
2N6343	TO-220	400	8	75 "	2.5 "	.5	75 max.	5 typ.	(commutating)

RECTIFIERS										USE
TYPE	MAT	VR	IF(A)	VF	@	IF(A)	IR(uA)	@	VR	
A14P	S	1000	2.5	1.25		2.5	0.5		1000	Transient Protected (Controlled Avalanche)
A15A	S	100	5	1.1		5	5		100	G.P. Rectifier
A15B	S	200	5	1.1		5	5		200	Transient Protected (Controlled Avalanche)
BYX21L/200/R	S	75	25	1.2		25	1.1mA		75	Automobile H. Duty Press fit.
DS5404	S	200	3	1.1		3	5		200	G.P. Rectifier
EM4005	S	50	1	1.1		1	5		50	G.P. Rectifier
EM401	S	100	1	1.1		1	5		100	G.P. Rectifier
EM404	S	400	1	1.1		1	5		400	G.P. Rectifier
EM410	S	1000	1	1.1		1	5		1000	G.P. Rectifier
MR110	S	100	10							G.P. Stud Mount
MR410	S	400	10							G.P. Stud Mount
MR510	S	1000	3	1.1		3	5		1000	G.P. Rectifier
IN3492/R	S	100	25	1.7		18	1mA		100	Heavy Duty Automobile Press fit.
IN3493/R	S	200	25	1.7		18	1mA		200	Heavy Duty Automobile Press fit.
IN4001	S	50	1	1.1		1	5		50	G.P. Rectifier.
IN4002	S	100	1	1.1		1	5		100	G.P. Rectifier.
IN4004	S	400	1	1.1		1	5		400	G.P. Rectifier.
IN4007	S	1000	1	1.1		1	5		1000	G.P. Rectifier.
IN5059(A14B)	S	200	2.5	1.25		2.5	0.2		200	Transient Protected (Controlled Avalanche).
IN5060(A14D)	S	400	2.5	1.25		2.5	0.2		400	Transient Protected (Controlled Avalanche).
IN5061(A14M)	S	600	2.5	1.25		2.5	0.2		600	Transient Protected (Controlled Avalanche).
IN5062(A14N)	S	800	2.5	1.25		2.5	0.5		800	Transient Protected (Controlled Avalanche).
IN5404	S	400	3	1.1		3	5		400	G.P. Rectifier.
IN5408	S	1000	3	1.1		3	5		1000	G.P. Rectifier.
IN5624	S	200	5	1.1		5	5		200	Transient Protected (Controlled Avalanche).

RECTIFIER BRIDGES										USE
TYPE	MAT	VR	IF(A)	VF	@	IF(A)	IR(uA)	@	VR	
PA60	S	600	8							G.P. Bridge
PB40	S	400	25	1.2(per leg)		12.5	10		400	Heavy Duty Bridge
MB1	S	100	1.8				5		100	Mini Bridge
MB4	S	400	1.8				5		400	Mini Bridge
PO4	S	400	6	1.3(per leg)		6	10		400	Medium Duty Mini Bridge
WO2	S	200	1.5	1.1(per leg)		1	10		200	Mini Bridge
WO4	S	400	1.5	1.1(per leg)		1	10		400	Mini Bridge

7 SEGMENT LED DISPLAYS									
Characteristic	Device	LT302 LT312 Z-4103	LT303 LT313 Z-4103	DL747	LN516RK FND500 FND507 FND560 Z-4150	LT547EJ Z-4151	TIL393-9 Z-4155	Pin Connections (top view)	
Digit Size	7.6mm	7.6mm	7.6mm	15.2mm	12.7mm	12.7mm	2.6mm		
Colour	red	red	red	red	red	orange	red		
Av. Fwd. Current	25mA	25mA	25mA	25mA	25mA	20mA	5mA		
Segment									
Fwd. Voltage	1.6	1.7V	1.7	2.4	1.7	2.1	1.7		
Min Reverse Breakdown Voltage	3V	3V	3V	6V	3V	5V	3V		
Max Rev Current	100uA	100uA	100uA	100uA	100uA	100uA	100uA		
Light Intensity Segment	320ucd	800ucd	800ucd	600ucd	600ucd	3300ucd	600ucd		
Max Pwr. Dissip.	500mW	340mW	340mW	960mW	400mW	400mW			

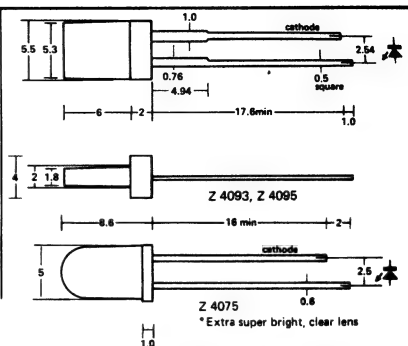
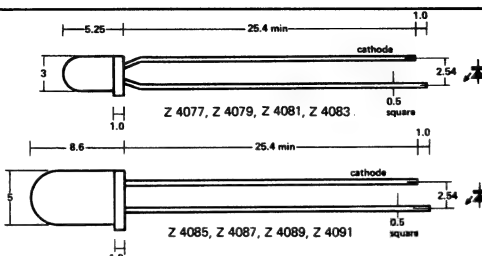
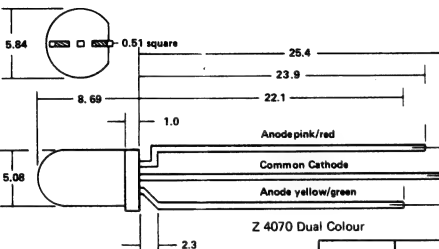
Common Cathode Types		Common Anode Types		Pin out Z-4155 TIL393-9	
DL704	TIL393-9	DL707	DL747	1. NC	7. Seg A Anodes
FND500	Z 4103	DL747	FND507	2. Digit 1 Cath	8. Dig 4 Cath
FND560	Z 4150	FND507	LT302	3. Seg C Anode	9. Seg E Anodes
LN516RK	Z 4151	LT302	LT312	4. Dig 2 Cath	10. Dig 5 Cath
LT303		LT312	Z 4117	5. Dec P. Anodes	11. Seg D Anode
LT313		Z 4117	Z 4152	6. Dig 3 Cath	12. Dig 6 Cath
LT547EJ		Z 4152			13. Seg G Anode
					14. Dig 7 Cathode
					15. Seg B Anode
					16. Dig 8 Cath
					17. Seg F Anode
					18. Dig 9 Cath

Pin out DL747		Pin out Z-4150 FND500 FND507 FND560 LT516RK LT547EJ 6680		Pin out Z-4151		Pin out DL704		Pin out DL707		Pin out Z-4117 LT302 LT312		Pin out Z-4103 LT303 LT313	
1. NC	10. NC	1. Seg. E	10. Seg. G	1. Seg. F	10. NC	1. Seg. A	10. Seg. C	1. Seg. A	10. Seg. C	1. Seg. A	10. Seg. C	1. NC	10. R. Dec Point
2. Seg. A	11. Seg. D	2. Seg. D		2. Seg. G	11. NC	2. Seg. F	11. Seg. G	2. Seg. F	11. Seg. G	2. Seg. F	11. Seg. G	2. Cathode	11. Seg. C
3. Seg. F	12. Common	3. Common		3. NC	12. Cathode	3. Anode	12. NC	3. Anode	12. NC	3. Anode	12. NC	3. Seg. F	12. Seg. B
4. Common	13. Seg. C	4. Seg. C		4. Cathode	13. Seg. B	4. NC	13. Seg. B	4. NC	13. Seg. B	4. NC	13. Seg. B	4. Seg. G	13. Seg. A
5. Seg. E	14. Seg. G	5. Dec. Point		5. NC	14. Seg. A	5. NC	14. Anode	5. NC	14. Anode	5. NC	14. Anode	5. Seg. E	14. NC
6. Common	15. Seg. B	6. Seg. B		6. Seg. E		6. Dec. Point		6. Dec. Point		6. L. Dec. Point		6. Seg. D	
7. Dec. Point	16. NC	7. Seg. A		7. Seg. G		7. Seg. E		7. Seg. E		7. Seg. E		7. NC	
8. NC	17. Common	8. Common		8. Seg. C		8. Seg. D		8. Seg. D		8. Seg. D		8. NC	
9. NC	18. NC	9. Seg. F		9. Dec. Point		9. Anode		9. R. Dec. Point		9. R. Dec. Point		9. Cathode	

USING LEDs									
DC Operation When using a Light Emitting Diode (LED) as an indicator, use the following formula to determine series resistance for various voltages: $R = (E - 1.7) \times 1000 : I$; where R is the resistance in ohms, E is the supply voltage (DC) and I is the LED current in milliamps. EG. to operate the LED at 20mA; for 6V, use 220 ohms 9V, use 390 ohms 12V, use 560 ohms 24V, use 1.2k ohms									
Mains Operation To operate a LED directly from the 240V mains, a better scheme is to use the second circuit shown. In this, a capacitor is used as the voltage dropping element. A 1N4002 diode or similar across the LED provides the rectification required. As the voltage drop across the LED is negligible compared with the supply, capacitor current is almost exactly equal to mains voltage divided by the capacitive reactance Xc. At 50Hz, 0.47uF will result in an Av LED current of about 16mA. Resistor Rs is to limit turn-on transients. A value of around 3.4k (2 x 6.8k par.) should be adequate.									

HIGH PERFORMANCE LEDs

Specifications subject to change depending on manufacturer.

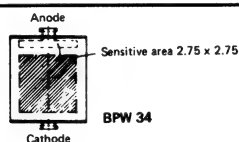


Type	Z 4075 Red Clear	Z 4077 Red Diffused	Z 4079 Green Diffused	Z 4081 Yellow Diffused	Z 4083 Orange Diffused	Z 4085 Red Diffused	Z 4087 Green Diffused	Z 4089 Yellow Diffused	Z 4091 Orange Diffused	Z 4093 Red Rectangular Diffused	Z 4095 Green Rectangular Diffused	Z 4070 Dual Colour Yellow/Green Milky Clear	Z 4070 Dual Colour Pink/Red
Nominal Size (mm)	5 diam	3 diam	3 diam	3 diam	3 diam	5 diam	5 diam	5 diam	5 diam	2 x 5.5 rect	2 x 5.5 rect	5 diam	5 diam
Forward Voltage (V_F @ $I_F = 20\text{mA}$)	1.6V	2.1-2.8	2.1-2.8	2.1-2.8	2.0-2.8	2.1-2.8	2.1-2.8	2.1-2.8	2.0-2.8	2.1-2.8	2.0-2.8	2.0-3.0	2.0-3.0
Maximum Forward Continuous Forward Current (I_F)	50mA	40mA	40mA	40mA	40mA	40mA	40mA	40mA	40mA	40mA	40mA	40mA	40mA
Reverse Voltage (V_R 100uA)	4	5	5	5	5	5	5	5	5	5	5	5	5
Luminous Intensity (mcd @ $I_F = 20\text{mA}$) typ	200	3.5	5.0	5.0	7.0	4.0	6.0	6.0	9.0	1.2	1.5	3.0	4.5
Peak Wavelength (nm)	660	697	565	585	635	697	565	585	635	697	565	635	565

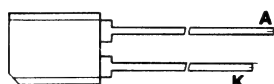
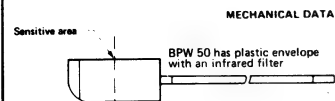
INFRARED OPTICS

BPW 34 & BPW 50

SILICON PHOTO P-I-N DIODE



	BPW 50	BPW 34
Continuous reverse voltage	V_R max. 32 V	32 V
Total power dissipation up to $T_{amb} = 47.5^\circ\text{C}$	P_{tot} max. 150 mW	150 mW
Junction temperature	T_j max. 100 °C	100 °C
Dark reverse current	$I_{R(D)} <$	30 nA
$V_R = 10\text{ V}; E_e = 0$		2 nA
Light reverse current	$I_{R(L)} >$	30 uA
$V_R = 5\text{ V}; E_e = 1\text{ mW/cm}^2; \lambda = 930\text{ nm}$		10 uA
Wavelength at peak response	λ_{pk} typ. 930 nm	850 nm
$V_R = 5\text{ V}$		
Sensitive area	A typ. 5 mm ²	7.6 mm ²



CQY89, LD271 GaAs LIGHT EMITTING DIODE

Epitaxial gallium arsenide light emitting diode intended for remote-control applications. It emits radiation in the near infrared when forward biased. Infrared translucent epoxy encapsulation (dark blue).

Continuous reverse voltage	V_R max. 5 V
Forward current (d.c.)	I_F max. 130 mA
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	P_{tot} max. 215 mW
Junction temperature	T_j max. 100 °C
Radiant intensity (on-axis) at $I_F = 100\text{ mA}$	$I_e >$ 9 mW/sr
	$I_e >$ 9 to 20 mW/sr
	$I_e >$ 15 mW/sr
Wavelength at peak emission	λ_{pk} typ. 930 nm

4N28 OPTIC COUPLER

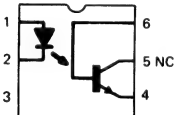
A Gallium Arsenide LED optically coupled to a silicon phototransistor designed for application requiring electrical isolation and high current transfer ratios. They are a 6DIL plastic low cost pack. They are ideal for interfacing and coupling systems, phase and for feedback control, solid state switching and general purpose switching circuits.

Specifications:

Diode: $V_r = 3\text{ volts}; I_f = 80\text{ mA cont}; I_f = 3\text{ A peak}; V_f @ 50\text{ mA} = 1.5\text{ A max.}$ $P_d = 150\text{ mW}$
NPN Photo Transistor: $V_{ce} = 30\text{ volts}; V_{cb} = 70\text{ volts}; P_d = 150\text{ mW}$ $I_{ce} = \text{dark current} = 50\text{ nA max.}$ ($V_{ce} = 10\text{ volts}$)
Total device rating: $P_d = 250\text{ mW}$. Isolation voltage - 500 min.



Cat Z-4804
DIL PACK
Top View
PIN CONNECTIONS



MOC 3021 TRIAC DRIVER OUTPUT COUPLER

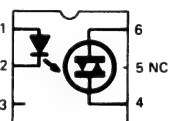
This triac driver output coupler is a gallium arsenide LED pack, optically coupled to a silicon bilateral switch designed for general applications requiring isolated triac triggering such as interface from logic to mains operated equipment. These devices offer low current, isolated ac switching; high output blocking voltage; small size and low cost.

Specifications:

Peak blocking voltage: 400
Isolation voltage: 7500 min.
LED trigger current: 5 mA typ.



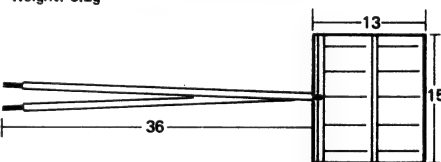
Cat Z-4516
DIL PACK
Top View
PIN CONNECTIONS



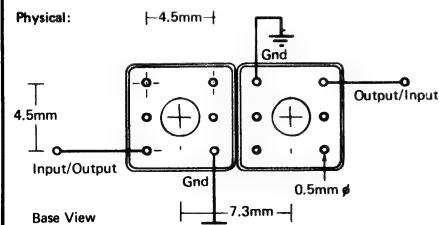
MINIATURE SILICON SOLAR CELL

Z-4840

Output Voltage: 0.43V
 Output Current: 28mA
 Output Power: 15mW
 Reverse Voltage: 10V max
 Response Speed: 20uS (load dependent)
 Operating Temperature: $-65^\circ\text{ to }+175^\circ\text{C}$
 Peak Spectral Response: 800nm
 Termination: 30AWG colour code flex wire
 Dimensions: 15mm x 13mm ($\pm 0.5\text{ mm}$) x 0.65mm (1.5mm incl. terminating wire)
 Weight: 0.2g



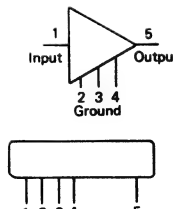
HELICAL FILTERS



Specifications:	L-1850	L-1860
Centre Frequency	440MHz	477MHz
Bandwidth (@ -1dB)	12MHz min.	
Selectivity ($F_o \pm 30\text{ MHz}$)	12dB min.	
Insertion Loss	3.0dB max.	
Input Impedance	50 ohm	
Output Impedance	50 ohm	

OM350 AMPLIFIER

Specifications
 Operating Voltage: 12V
 Operating Frequency Range: 40MHz to 860MHz $\pm 1\text{ dB}$
 Maximum Output Voltage: 100mV @ -60dB IMD
 Gain: 18dB
 Noise: 6dB



OPERATIONAL AMPLIFIERS HANDY REFERENCE GUIDE

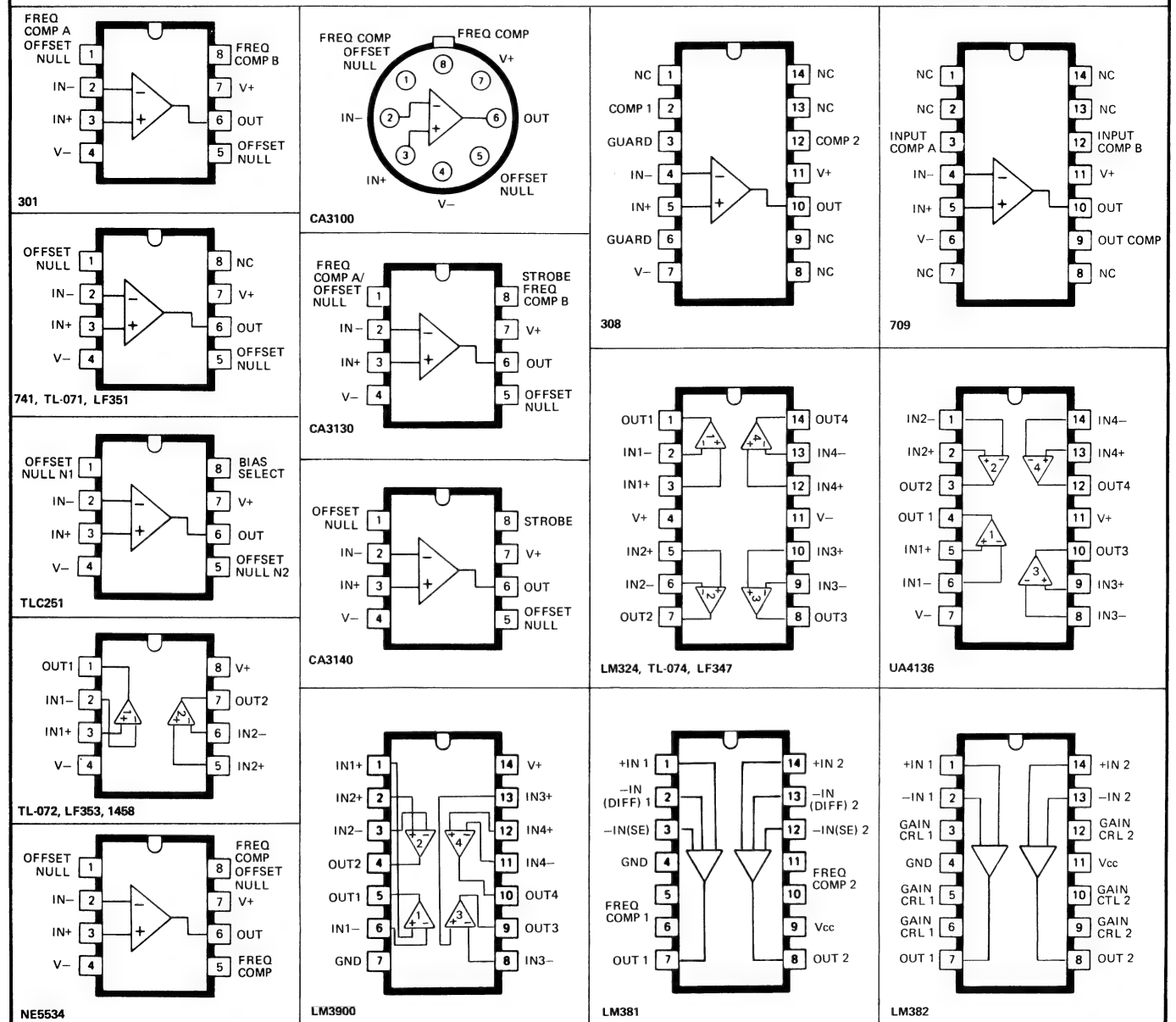
		Input Offset Voltage	Input Offset Current	Input Bias Current	Voltage Gain	Bandwidth $A_V = 1$	Slew Rate $A_V = 1$	Output Voltage Swing $R_L = 10\text{ k}$ $V_S = \pm 15$	Supply Voltage		Common Mode Rejection	Differential	Supply Current $T_A = 25^\circ\text{C}$	
Type	Device	Max (mV)	Max (nA)	Max (nA)	Min (Volts/V)	Typ (MHz)	Typ (V/us)	(V)	Min (V)	Max (V)	Ratio (dB) Min	Input Voltage (V)	Max (mA) (Note 1)	Internal Frequency Compens
SINGLE OP AMPS														
LM301	G.P. Amplifier	10	70	300	15k	1	0.5	± 12	± 3	± 18	± 12	± 30	3	No
LM308	G.P. Amplifier	10	1.5	10	15k	1	0.3	± 13	± 2	± 18	± 14	(Note 2) ± 5	0.8	No
LM709	G.P. Amplifier	10	500	1500	15k	1	0.3	± 12	± 9	± 18	± 8	± 5	6.6	No
LM741	G.P. Amplifier	7.5	300	800	15k	1	0.5	± 13	± 3	± 18	± 12	± 30	2.8	Yes
TL071	JFET Lo Noise	10	0.2	7	25k	3	13	± 12		± 18	70	± 30	2.5	Yes
LF351	JFET Lo Noise	10	0.1	8	25k	4	13	± 12		± 18	70	± 30	3.4	Yes
TLC251	Prog. Lo Power CMOS	10	0.1	0.15	15k	0.7	0.6	± 7.8	± 1	± 18	77	± 18	0.22	Yes
CA3100	Wide band Amp.	5	400	2000	36 dB	38	25	± 9		± 18	76	± 12	10.5	No
CA3130	MOSFET Input	15	0.3	0.5	50k	4	10	± 6 ($V_S = \pm 8$)		± 8	70	± 8	15	No
CA3140	MOSFET Input	15	0.3	0.5	20k	4.5	9	± 12		± 18	70	± 8	5.5	Yes
NE5534	Low Noise	5	400	2000	15k	10	6	± 12	± 3	± 22	70	± 0.5	8	No
DUAL OP AMPS														
LM381	Lo Noise			500	160k	15		± 12	9 to	40			16	Yes
LM382	Lo Noise			500	100k	15		± 12	9 to	40			16	Yes
TL072	JFET Lo Noise	10	0.2	7	25k	3	13	± 12		± 18	70	± 30	5	Yes
LF353	JFET Lo Noise	10	0.1	8	25k	4	13	± 12		± 18	70	± 30	6.5	Yes
QUAD OP AMPS														
LM324	G.P. Amplifier	9	150	500	15k	1	*	± 13	± 1.5	± 16	65	32	3	Yes
UA4136	G.P. Lo Noise	6	200	500	15k	3	1	± 12		± 18	70	± 30	10	Yes
TL074	JFET Lo Noise	10	0.2	7	25k	3	13	± 12		± 18	70	± 30	11	Yes
LF347	JFET Lo Noise	10	0.01	8	25k	4	13	± 12		± 18	70	± 30	11	Yes
LM3900	Norton Amp.	*	*	200	2.8k	2.5	20	10	4 (± 2)	36 (± 18)	*	*	10	Yes

Package and Pin Connections

*Not specified

Note 1 : Supply current for all channels of amplifier in the package

Note 2: Inputs have shunt diode protection, current must be limited.



LINEAR DEVICE PIN CONNECTIONS

PLL02A Prog PLL Block 	LM10CLN Op Amp & Voltage Reference 	LM311 Voltage Comparator 	LM319N High Speed Dual Comparator
LM335 Precision Temperature Sensor LM336 2.5V Reference Source 	LM339 Low Power Quad Comp 	LM380 Audio Power Amp 	LM386 Low Power Audio Amplifier
LM394C Super Match Transistor Pair LM334 Adjustable Current Source 	ZN414 IC Radio Chip 	LM567 Tone Decoder 	LM723 Adjust Voltage Reg
LM1871 RC Transmitter Enc 	LM1872 RC Receiver Dec 	XR2206 Monolithic Function Generator 	LM2917 Frequency to Voltage Converter
LM3046 Transistor Array 	LM3080 Operational Transconductance Amp 	LM3909 LED Flasher Oscillator 	LM3914 Dot/Bar Display Driver
LM13080 Programmable Power Op Amp 	LM13600 Dual Trans-conductance Amplifier 	MM5837 Digital Noise Generator 	SN76604N RC Servo Amplifier

ZENER DATA

Type No. ▲ 400mW Series	Type No. ▼ 1Watt Series	Nominal Zener Voltage $V_Z @ I_{ZT}$ (V)	Test Current I_{ZT} (mA) 400mW 1W
1N746	1N4728	3.3	20
1N747	1N4729	3.6	20
1N748	1N4730	3.9	20
1N750	1N4732	4.7	20 53
1N751	1N4733	5.1	20 49
1N752	1N4734	5.6	20 45
1N753	1N4735	6.2	20 41
1N754, 1N957	1N4736	6.8	18.5 37
1N755, 1N958	1N4737	7.5	16.5 34
1N756, 1N959	1N4738	8.2	15 31
1N757, 1N960	1N4739	9.1	14 28
1N758, 1N961	1N4740	10	14 25

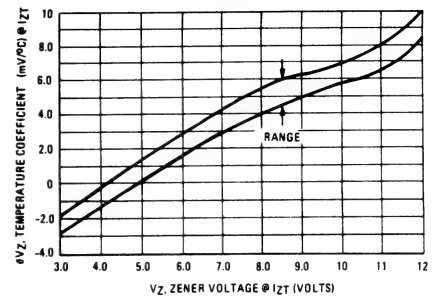
▲DC Power Dissipation: 400milliwatts @ 50°C Ambient
(Derate 3.2mW/°C above 50°C)

Type No. ▲ 400mW Series	Type No. ▼ 1Watt Series	Nominal Zener Voltage $V_Z @ I_{ZT}$ (V)	Test Current I_{ZT} (mA) 400mW 1W
1N962	1N4741	11	12.5 23
1N759, 1N963	1N4742	12	11.5 21
1N964	1N4743	13	10.5 19
1N965	1N4744	15	9.5 17
1N966	1N4745	16	8.5 15.5
1N967, 1N4112	1N4746	18	7.8 14
1N968	1N4747	20	7 12.5
1N969	1N4748	22	6.2 11.5
1N970	1N4749	24	5.6 10.5
1N971	1N4750	27	5.3 9.5
1N972	1N4751	30	5.3 8.5
1N973	1N4752	33	5.2 7.5

▼DC Power Dissipation: 1Watt @ 50°C Ambient) (Derate
6.67mW/°C above 50°C)

This range will dissipate up to 3W @ 75°C with 10mm
lead length as heatsink.

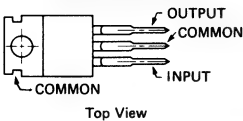
Temperature coefficient range for 1Watt units to 12 volts.



THREE TERMINAL REGULATORS

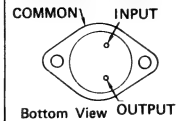
Type	Polarity	Case	V_{OUT} min typ max	I_{OUT} (nom)	Dropout Voltage
78L05	positive	TO-92	4.8 5 5.2	100mA	1.7
78L06	positive	TO-92	5.95 6.2 6.45	100mA	1.7
78L09	positive	TO-92	8.64 9 9.36	100mA	1.7
78L12	positive	TO-92	11.5 12 12.5	100mA	1.7
78L15	positive	TO-92	14.4 15 15.6	100mA	1.7
7805	positive	TO-220	4.8 5 5.2	1A	2
7806	positive	TO-220	5.75 6.0 6.25	1A	2
7809	positive	TO-220	8.64 9 9.36	1A	2
7812	positive	TO-220	11.5 12 12.5	1A	2
7815	positive	TO-220	14.4 15 15.6	1A	2
7824	positive	TO-220	23 25 26	1A	2
7905	negative	TO-220	-4.8 -5 -5.2	1A	1.1
7912	negative	TO-220	-11.5 -12 -12.5	1A	1.1
7915	negative	TO-220	-14.4 -15 -15.6	1A	1.1
LM317K	positive	TO-3	adj. 1.2 to 37	1.5Amin	
LM317T	positive	TO-220	adj. 1.2 to 37	1.5Amin	
LM350K	positive	TO-3	adj. 1.2 to 33	3A	
LM350T	positive	TO-220	adj. 1.2 to 33	3A	
78H05	positive	TO-3	4.85 5 5.25	5A	2.5

Connections TO-220 Package
78xx Positive Regulator Series



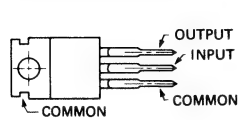
Top View

Connections TO-3 Package
78H05 Positive Regulator



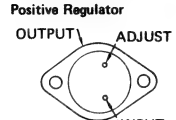
Bottom View

Connections TO-220 Package
79xx Negative Regulator Series



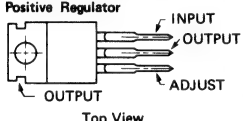
Top View

Connection TO-3 Package
LM317K and LM350K
Positive Regulator



Bottom View

Connections TO-220 Package
LM317T and LM350T
Positive Regulator

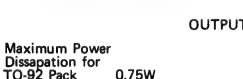


Top View

Note:
Maximum power
dissipation for:

TO-220 pack	15W
LM317T	15W
LM350T	25W
TO-3 pack	20W
LM317K	20W
LM350K	30W

Connection TO-92 Package
78Lxx Positive Regulator Series.



Bottom View

Maximum Power
Dissipation for
TO-92 Pack 0.75W

INCREASE THE OUTPUT VOLTAGE OF A 3 TERMINAL VOLTAGE REGULATOR

Regulators like the 7805 and the 7905 can give higher output if two
additional resistors are configured into the circuit as shown below.

$$R1 = V_R / 0.02$$

$$R2 = V_B / 0.025$$

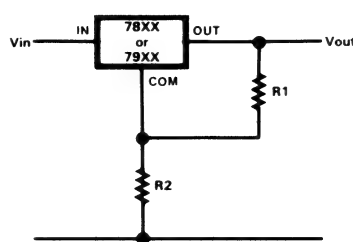
Where V_R is the normal regulated voltage from the IC and V_B is the
amount by which the regulator has to be boosted above V_R .

Some examples are given below:

V_{out}	Regulator	R1	R2
6	5V	220	39
9	5V	220	150
13.8	12V	560	68
18	15V	680	120

To make a variable regulator, use a potentiometer as R2.

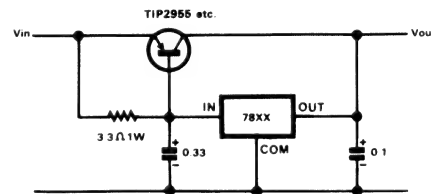
VOLTAGE BOOSTING



INCREASING THE OUTPUT CURRENT OF THE REGULATOR

By adding a PNP power transistor to a positive regulator, the output
current can be increased above the normal rating of the regulator
itself. The circuit shown below can be expected to deliver in excess
of 4A with the pass transistor mounted on a heatsink. The same
conditions can also be implemented with a negative regulator, the
difference being the polarities of components, the pass transistor
in this case would be an NPN type such as a 2N3055.

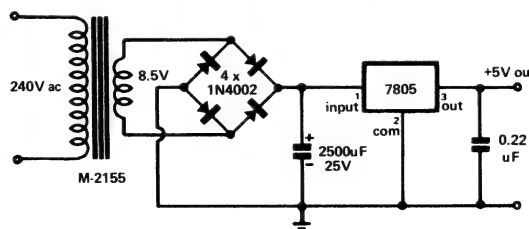
CURRENT BOOSTING



TYPICAL POWER SUPPLY USING A 3 TERMINAL REGULATOR

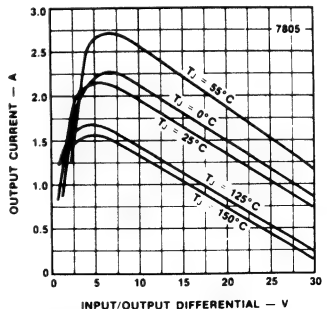
Output: 5V @ 1A

The same basic circuit can be used with other regulators of different
voltages, only the input ac voltage has to be changed to accommodate
the requirement of that regulator. eg. If an output of 12V was the
requirement, a 7812 IC could be used with an ac input voltage of 15V.

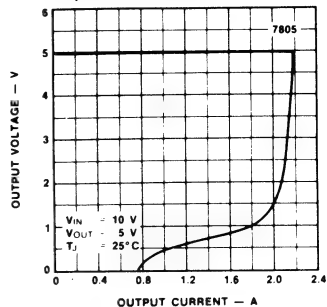


TYPICAL CHARACTERISTICS OF THE 7805 3 TERMINAL REGULATOR

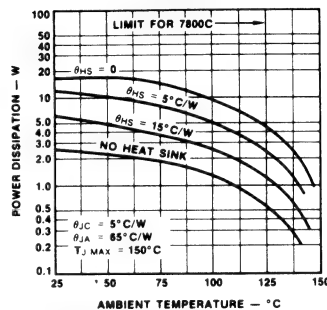
The other members of this 78xx/79xx family have
similar characteristics to those shown. For other
data, refer to manufacturers literature.



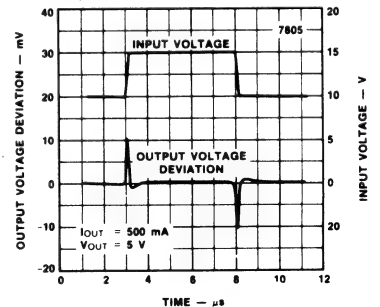
Peak Output Current as a Function of Input to
Output Differential Voltage



Current Limiting Characteristics 7805



Worst Case Power Dissipation Versus Ambient
Temperature (TO-220 Pack)



Line Transient Response 7805

VOLTAGE REGULATORS

These voltage regulators almost make power supply building
unnecessary since they require only a filtered DC voltage input,
they are essentially indestructible (if used within manufacturer's
specs.) because of internal current limiting and thermal shut-
down should a short occur. They are ideally suited to local, on
board regulation simplifying power supply distribution systems.
Excellent for TTL and project supplies. With the advent of
microprocessors and microcomputers, these regulators have
been used extensively in power supplies for such systems. This
type of use typifies their versatility and reliability. Another area
of supply regulation use is with analogue operational amplifiers.
These circuits usually call for both + and - complementary rail
voltages. These three terminal devices ideally suit such
requirements. Both positive and negative devices will give a
current output in excess of 1A and foldback current limiting
occurs if the output is shorted.

555 TIMER (LM/NE555 Bipolar, TLC555 CMOS)

General

The 555 Timer is a highly versatile low-cost IC specifically designed for precision timing applications. It can also be used in monostable multi-vibrator, astable multivibrator, and Schmitt trigger applications.

Bipolar 555

The 555 has many attractive features. It can operate from 4.5V to 16V. Its output can source (supply) or sink (absorb) load current up to a maximum of 200 mA and so can directly drive loads such as relays, LED's, low-power lamps, and high impedance speakers. When used in the 'timing' mode, the IC can readily produce accurately timing periods variable from a few microseconds to several hundred seconds via a single R-C network. Timing periods are virtually independent of supply rail voltage, have a temperature coefficient of only .005% per °C, can be started via a TRIGGER command signal, and can be aborted by a RESET command signal.

When used in the monostable mode, the IC produces output pulses with typical rise and fall times of a mere nS.

When used in the astable mode both the frequency and the duty cycle of the waveform can be accurately controlled with two external resistors and one capacitor.

CMOS 555

Due to its high impedance inputs (typically $10^{12} \Omega$), it is capable of producing accurate time delays and oscillations while using less expensive, smaller timing capacitors than NE555. Like the NE555, the TLC555 achieves both monostable (using one resistor and one capacitor) and astable (using two resistors and one capacitor) operation. In addition, 50% duty cycle astable operation is possible using only a single resistor and one capacitor. The TLC555 will operate at frequencies up to 2 MHz and is fully compatible with CMOS, TTL, and MOS logic.

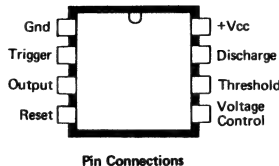
While the complementary CMOS output is capable of sinking over 100mA and sourcing over 10mA, the TLC555 exhibits greatly reduced supply current spikes during output transitions. This minimises the need for the large decoupling capacitors required by the NE555.

Specifications

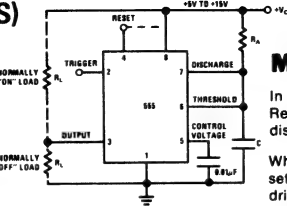
Vcc = 15V unless otherwise stated				LM/NE555C Limits		TLC555C Limits					
Parameters		Conditions		Min	Typ	Max	Conditions		Min	Typ	Max
Supply Voltage		(RL = ∞, Vop = low)		4.5		16V	(RL = ∞, Vop = low)		2		18
Supply Current						15mA					360uA
Power Dissipation						600mW					600mW
Threshold Voltage		(% of Vcc)				67%	(% of Vcc)				67%
Threshold Current						0.1 0.25uA	(Vcc = 5V)				10pA
Trigger Voltage		(% of Vcc)				33%	(% of Vcc)				33%
Trigger Current						0.5uA	(Vcc = 5V)				10pA
Reset Voltage				0.4	0.5	1V					0.7V
Reset Current						0.1 0.4 uA	(Vcc = 5V)				10pA
High Level Output		(Iol = 100mA)		12.75	13.3V		(Iol = 10mA)				12.7V
Low Level Output		(Iol = 100mA)			2	2.5V	(Iol = 100mA)				1
Output Current		Sink				200mA					100mA
		Source				200mA					10mA
Initial Error of Timing Interval						1%					1%

FUNCTION TABLE

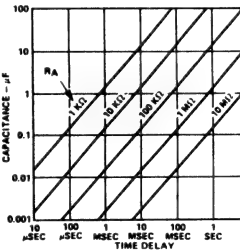
RESET	TRIGGER VOLTAGE	THRESHOLD VOLTAGE	OUTPUT	DISCHARGE SWITCH
Low	Irrelevant	Irrelevant	Low	On
High	<1/3 V_{cc}	Irrelevant	High	Off
High	>1/3 V_{cc}	>2/3 V_{cc}	Low	On
High	>1/3 V_{cc}	<2/3 V_{cc}	As previously established	



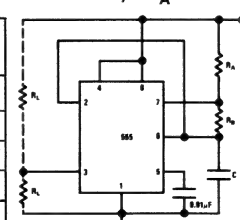
Pin Connections



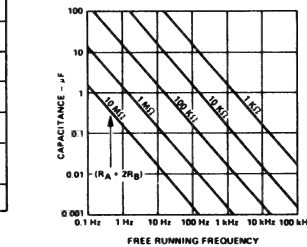
Basic Monostable Circuit



Time Delay vs R_A and C



Basic Astable Circuit



Free Running Frequency vs R_A , R_B and C

MONOSTABLE OPERATION

In the monostable mode, the timer functions as a one-shot. Referring to circuit the external capacitor is initially held discharged by a transistor inside the timer.

When a negative trigger pulse is applied to lead 2, the flip-flop is set, releasing the short circuit across the external capacitor and drives the output HIGH. The voltage across the capacitor, increases exponentially with the time constant $t = R_1C_1$. When the voltage across the capacitor equals $2/3 V_{CC}$, the comparator resets the flip-flop which then discharges the capacitor rapidly and drives the output to its LOW state.

The circuit triggers on a negative-going input signal when the level reaches $1/3 V_{CC}$. Once triggered, the circuit remains in this state until the set time has elapsed, even if it is triggered again during this interval. The duration of the output HIGH state is given by $t = 1.1 R_1C_1$. The timing interval is independent of supply.

When Reset is not used it should be tied high to avoid any possibility of false triggering.

ASTABLE OPERATION

When the circuit is connected as shown it triggers itself and free runs as a multivibrator. The external capacitor charges through R_1 and R_2 and discharges through R_2 only. Thus the duty cycle may be precisely set by the ratio of these two resistors.

In the astable mode of operation, C_1 charges and discharges between $1/3 V_{CC}$ and $2/3 V_{CC}$. As in the triggered mode, the charge and discharge times and therefore frequency are independent of the supply voltage.

The charge time (output HIGH) is given by:

$$t_1 = 0.693 (R_1 + R_2) C_1$$

and the discharge time (output LOW) by:

$$t_2 = 0.693 (R_2) C_1$$

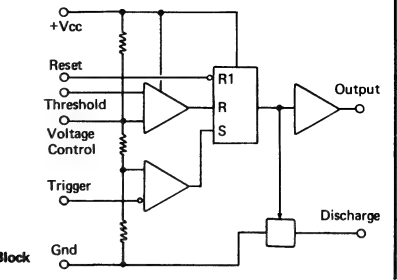
Thus the total period T is given by:

$$T = t_1 + t_2 = 0.693 (R_1 + 2R_2) C_1$$

The frequency of oscillation is then:

$$f = \frac{1}{T} = \frac{1.44}{(R_1 + 2R_2) C_1}$$

The duty cycle is given by: $D = \frac{R_2}{R_1 + 2R_2}$



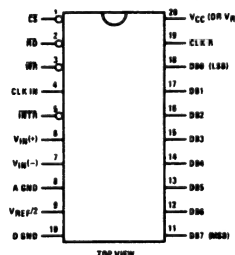
Functional Block Diagram

ADC0802 8-Bit μP Compatible A/D Converter

ADC 0802LCN

Specifications

Resolution	8 bits
Accuracy ($V_{ref}/2 = 2.5Vdc$)	$\pm 1/2$ LSB
Conversion Time	110uS
Input Voltage Range	0 - 5V
Output Logic Level	TTL, TRI-STATE
Supply	+5V

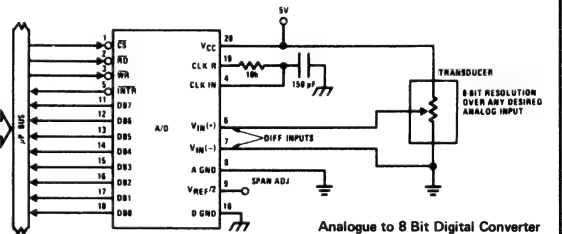


TOP VIEW

Features

- Differential Input
- Operates with 2.5V (LM336) voltage reference
- On chip Clock
- Differential input
- No zero adjust
- Operates ratiometrically or with 5Vdc, 2.5Vdc or analogue span adjusted voltage reference

Typical Application



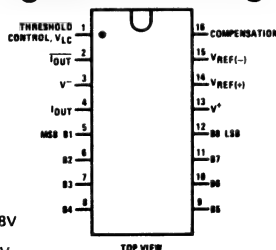
Analogue to 8 Bit Digital Converter

DAC0800 8-Bit Digital-to-Analog Converter

DAC0800LCN

Specifications

Resolution	8 bits
Linearity (25°C)	0.19%
Settling Time ($\pm 1/2$ LSB)	100nS
Full Scale Error	± 1 LSB
Supply Range	$\pm 4.5V$ to $\pm 18V$
Output Compliance	-10V to +18V

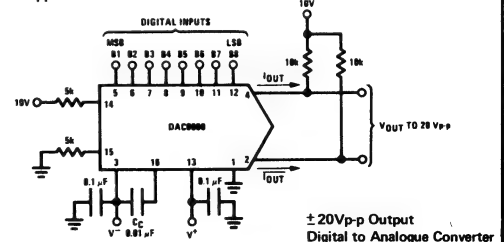


TOP VIEW

Features

- Interface to TTL, CMOS, PMOS and others
- Complementary current outputs
- 2 Quadrant wide range multiplying capability
- Low power consumption 33mW @ $\pm 5V$

Typical Application



74 SERIES PIN CONNECTIONS

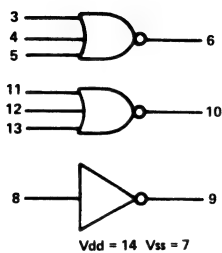
7400 Quad 2-Input NAND Gate 	7401 Quad 2-Input NAND, Open Collector 	7402 Quad 2-Input NOR Gate 	7404 Hex Inverter
7405 Hex Inverter, Open Collector 	7408 Quad 2-Input AND Gates 	7410 Triple 3-Input NAND Gates 	7411 Triple 3-Input AND Gates
7413 Dual 4-Input NAND Schmitt Trigger 	7414 Hex Schmitt Trigger 	7420 Dual 4-Input NAND Gates 	7421 Dual 4-Input AND Gates
7427 Triple 3-Input NOR Gates 	7430 8-Input NAND Gate 	7432 Quad 2-Input OR Gates 	7437 Quad 2-Input NAND Buffer
7447 BCD to 7 Segment Decoder/Driver 	7453 Expandable 4 Wide AND-OR-INVERT Gate 	7454 4 Wide AND-OR-INVERT Gate 	7473 Dual JK Flip-Flop with Clear
7474 Dual D, Pos Edge Trig F/F, Pre-S & Clear 	7475 4 Bit Bi-stable Latch 	7476 Dual JK Flip-Flop with Pre-S & Clear 	7485 4 Bit Magnitude Comparator
7486 Quad EXCLUSIVE OR Gate 	7490 Decade Counter 	7491 8 Bit Shift Register 	7492 Divide-By-Twelve Counter

74 SERIES PIN CONNECTIONS

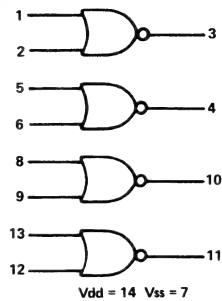
7493 Divide-By-Sixteen Counter 	7495 4 Bit Left/Right Shift Register 	74109 Dual JK Pos Edge Triggered Flip-Flop 	74121 Monostable Multivibrator
74123 Dual Retriggerable Monostable with Clear 	74132 Quad 2-Input NAND Schmitt Trigger 	74138 1-of-8 Decoder Multiplexer 	74139 Dual 1-of-4 Decoder
74153 Dual 4-Input Multiplexer 	74157 Quad 2-Input Multiplexer 	74165 8 Bit Parallel to Serial Converter 	74173 4 Bit D Type Register
74174 Hex D Type Flip-Flop 	74175 Quad D Type Flip-Flop 	74190 Up/Down Decade Counter 	74191 Up/Down Binary Counter
74192 Up/Down Decade Counter, Up/Dwn Clks 	74193 Up/Down Binary Counter, Up/Dwn Clks 	74196 Presettable Decade Counter 	74221 Dual Monostable Multivibrator
74240 Octal Buffer/Line Driver, 3 State Output 	74241 Octal Buffer/Line Driver, 3 State Output 	74244 Octal Buffer/Line Driver, 3 State Output 	74245 Octal Bus Transceiver, 3 State Output
74367 Hex 3 State Buffer 	74373 Octal Transparent Latch, 3 State Output 	74374 Octal D Type Flip-Flop, 3 State O/P 	<p>Please Note: The base connections shown for the 74 series apply to all of the family groups. These include: 74 - 74ALS - 74AC - 74F - 74H - 74HC - 74L - 74LS - 74S</p>

4000 SERIES CMOS PIN CONNECTIONS

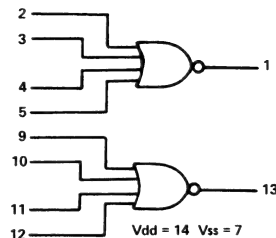
4000 Dual 3-Input NOR Gate with Inverter



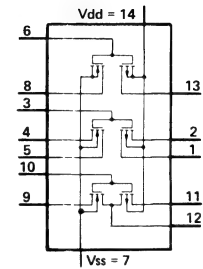
4001 Quad 2-Input NOR Gate



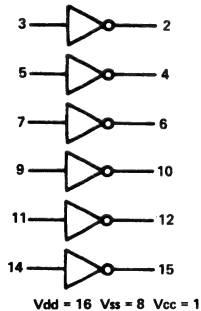
4002 Dual 4-Input NOR Gate



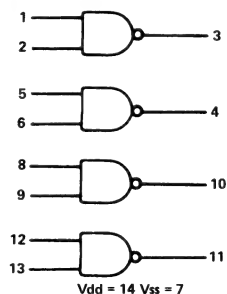
4007 Dual Complementary Pair Plus Inverter



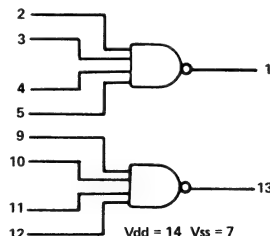
4009 Hex Inverter



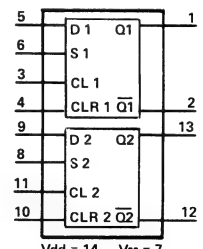
4011 Quad 2-Input NAND 4093 Schmitt Trigger



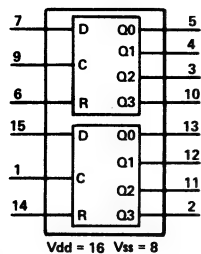
4012 Dual 4-Input NAND Gate



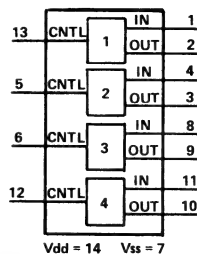
4013 Dual D Type Flip-Flop



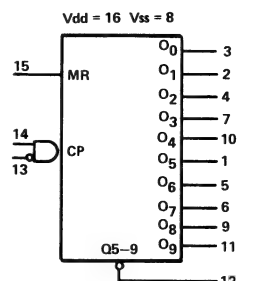
4015 Dual 4 Bit Shift Register



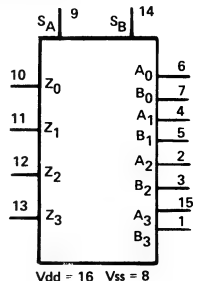
4016 Quad Bi-Lateral Switch 4066



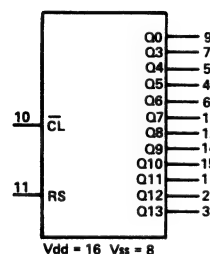
4017 Decade Counter with 10 Outputs



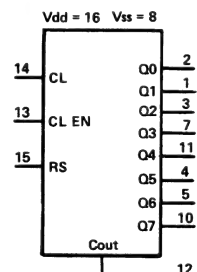
4019 Quad 2-Input Multiplexer



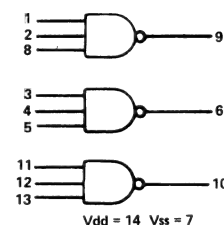
4020 14 Stage Binary Counter



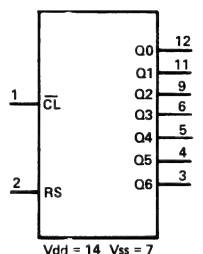
4022 4 Stage Divide by 8 Johnson Counter



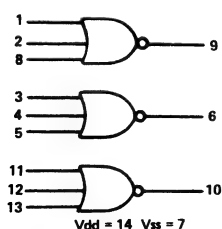
4023 Triple 3-Input NAND Gate



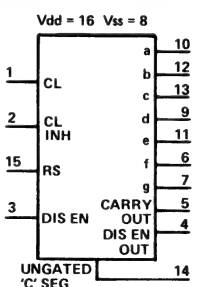
4024 7 Stage Binary Counter



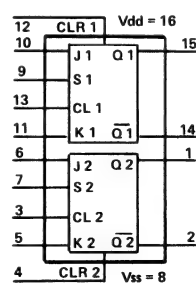
4025 Triple 3-Input NOR Gate



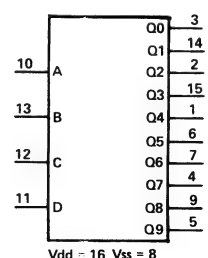
4026 Decade Counter & 7 Segment LED Driver



4027 Dual JK Flip-Flop



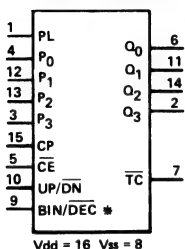
4028 1-of-10 Decoder



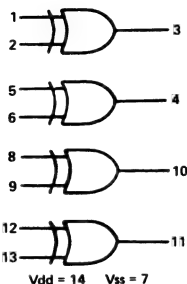
4000 SERIES CMOS PIN CONNECTIONS

**4029 Synchronous
4516 Up/Dwn Counter**
Counters

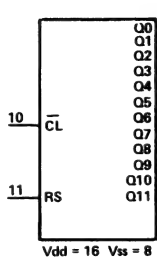
*4516 = Reset



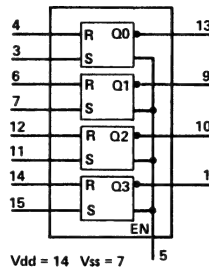
**4030 Exclusive
OR Gate**



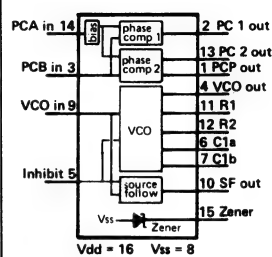
**4040 12 Stage Binary
Counter**



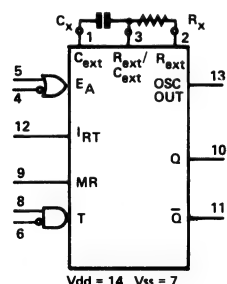
**4044 Quad 3 State
NAND RS Latch**



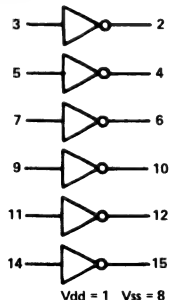
**4046 Phase Locked
Loop**



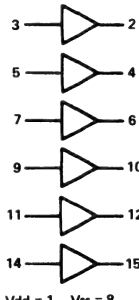
**4047 Monostable,
Astable Multivibrator**



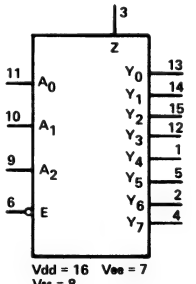
4049 Hex Inverter



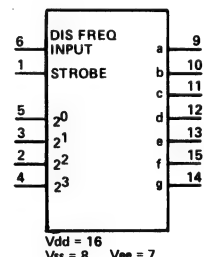
4050 Hex Buffer



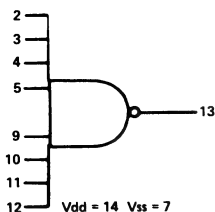
**4051 8 Channel
Multi/Demultiplexer**



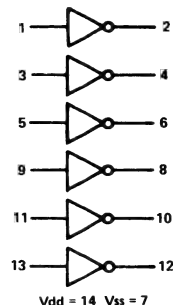
**4056 BCD to 7 Seg
Decoder/Driver LCD**



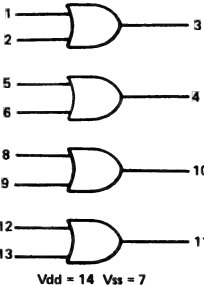
**4068 4-Input NAND
Gate**



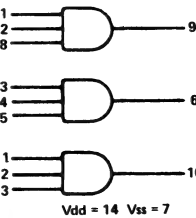
4069 Hex Inverter



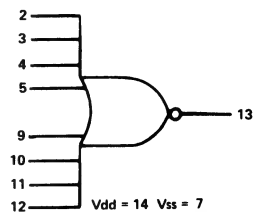
**4071 Quad 2-Input
OR Gate**



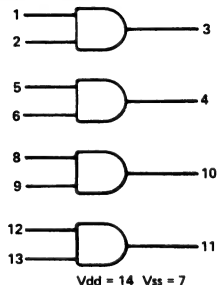
**4073 Triple 3-Input
AND Gate**



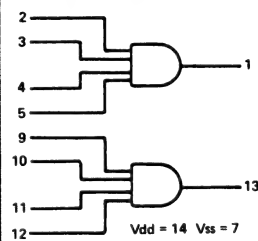
**4078 Dual 4-Input
NOR Gate**



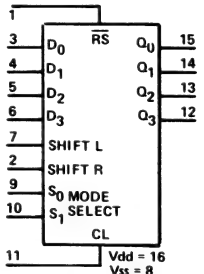
**4081 Quad 2-Input
AND Gate**



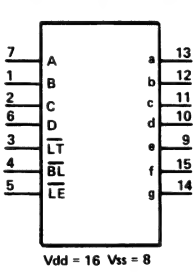
**4082 Dual 4-Input
AND Gate**



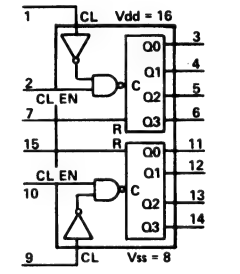
**40194 4 Bit Bi-Dir
Uni Shift Register**



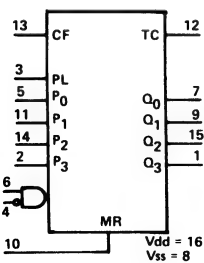
**4511 BCD to 7 Seg
Latch/Dec/Driver**



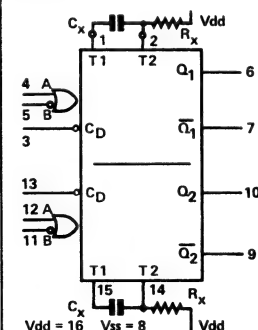
**4518 Dual 4 Bit
4520 Binary Counters**



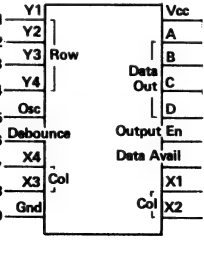
**4526 4 Bit Binary
Prog Dwn Counter**



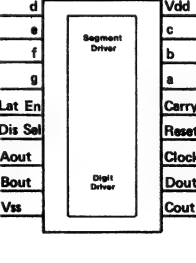
4528 Dual Monostable



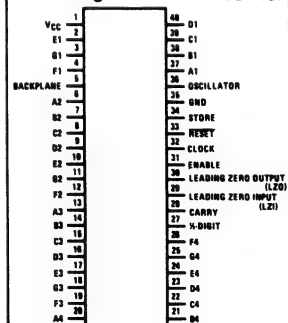
**74C922 16 Key
Encoder**



**74C926 4 Digit Counter
Counter, 7 Seg LED
Decoder/Driver**



**74C946 4 1/2 Digit Counter,
LCD 7 Segment Decoder/Driver**



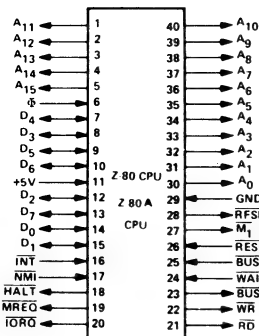
LSI DEVICE PIN CONNECTIONS

COMPARISON OF 24 PIN EPROMS AND RAMS

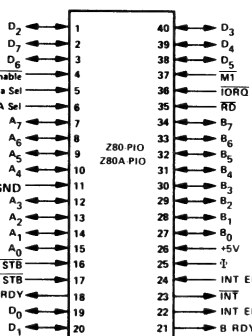
TYPE	PIN	READ	Disable	Power Down	Program	Verify
2516 EPROM 2k x 8	18 PD/PGM	0	-	+5V	pulse to 5V	0V
	19 A10	-	-	-	-	-
	20 CS	0	+5V	-	+5V	0V
2716 EPROM 2k x 8	18 CE	0V	+5V	N/A	pulse to 5V	0V
	19 A10	-	-	N/A	-	-
	20 OE	0V	-	N/A	+5V	0V
TMS2716 EPROM 2k x 8	18 CS/PGM	0V	+5V	N/A	pulse to 26V	0V
	19 VDD	+12V	+12V	N/A	+12V	+12V
	20 A10	-	-	N/A	-	-
2532 EPROM 2k x 8	18 A11	-	-	-	-	-
	19 A10	-	-	-	-	-
	20 PD/PGM	0V	+5V	+5V	pulse to 0V	0V
2732 EPROM 4k x 8	18 CE	0V	+5V	+5V	0V	0V
	19 A10	-	-	-	-	-
	20 OE/VPP	0	-	-	+25V	0V
2732A EPROM 4k x 8	18 CE	0V	5V	5V	0V	0V
	19 A10	-	-	-	-	-
	20 OE/VPP	0V	-	-	+21V	0V
2016, 4016 6116 STATIC RAM 2k x 8	18 CS	0V	+5V	+5V	0V	N/A
	19 A10	-	-	-	-	N/A
	20 OE	0V	+5V	+5V	+5V	N/A
REMAINING PINS (all types)	21 WR	+5V	-	-	0V	N/A
	22					
	23					
	24					

LSI DEVICES

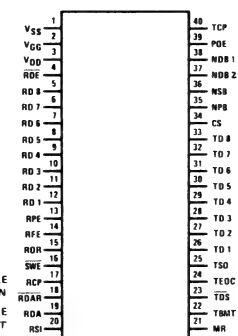
Z80 Central Processor Unit



Z80 PIO Parallel Input/Output Controller



MM5303 Universal Fully Asynchronous Receiver/Transmitter

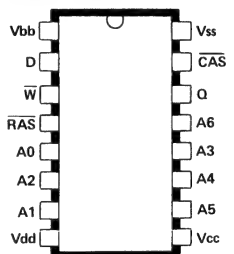


COMMON DYNAMIC RAMS PIN CONNECTIONS

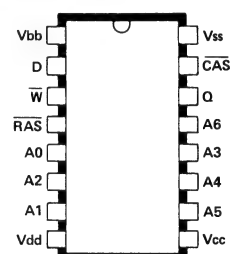
Pin Nomenclature

A0 - A7	Address Inputs	W	Write enable
CAS	Column address strobe	VBB	-5V power supply
D	Data input	VCC	+5V power supply
Q	Data output	VDD	+12V power supply
RAS	Row address strobe	VSS	0V ground
S	Chip select		

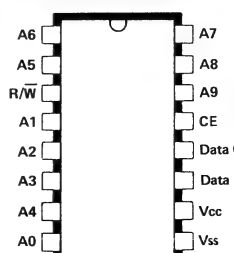
4027 Dynamic RAM 4k x 1 Bit



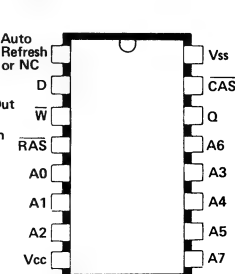
4116 Dynamic RAM 16k x 1 Bit



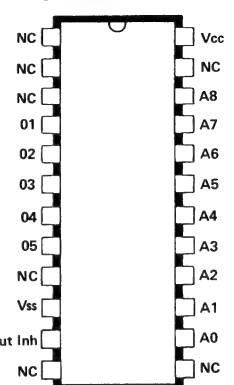
2102 Static RAM 1024 Bit (1024x1)



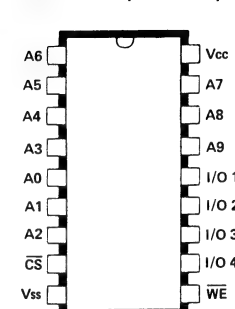
4164 Dynamic RAM 64k x 1 Bit



2513 Character Generator 64 x 8 x 5 Organization



2114 Static RAM 4096 Bit (1024x4)



ICL7106 3.5 DIGIT CMOS A/D CONVERTER

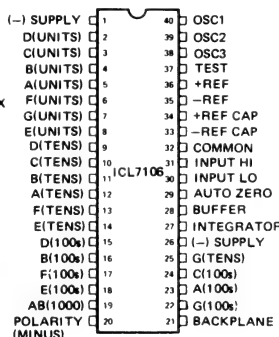
Z-6300

For Liquid Crystal Display

Supply Voltage	9 nominal, 15 max
Supply Current	0.8mA typ
Ratiometric Reading (Vin = ref & Vref = 100mV)	999/1000
Full Scale Reading (set with external R/C components)	200mV & 2.0V
Accuracy (Over entire ± 2000 counts)	± 1 count
Display Required	3 1/2 digit LCD
Input Impedance	10meg min
Reading Rate	3 per second

Suitable for use with the Z-4175 LCD Display shown below.
Used in the Dick Smith K-3450 Digital Panel Meter

ICL7106 PIN CONFIGURATIONS

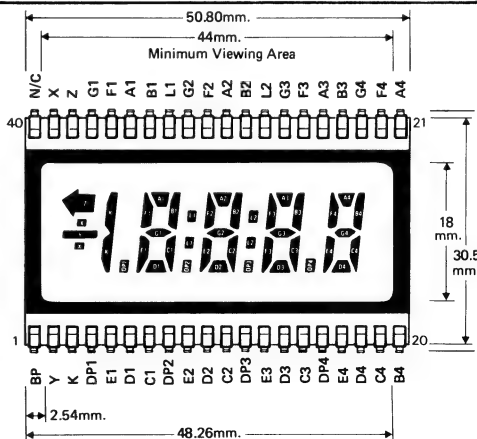
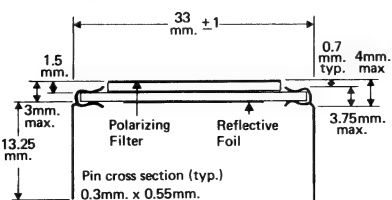


4 1/2 DIGIT LIQUID CRYSTAL DISPLAY

Specifications Z-4175





Operating Voltage	2min, 5max
DC Drive Component Allowable	25mV max
Operating Frequency Range	30 to 200Hz
Visual Threshold	10% on @ 22°C, 1Vrms
	90% on @ 22°C
Contrast Ratio	20:1
Viewing Angle	+50° from normal
Operating Temperature Range	-10 to +51°C

Suitable for use with the ICL7106 A/D Converter shown above




SIMPLE DIGITAL CIRCUITS

GATES

SYMBOL	CODE
 <p>INPUTS OUTPUT</p> <p>"AND" GATE</p>	<p>Output is "on" only when all inputs are "on". Output is "off" when any or all inputs are "off".</p>
 <p>INPUTS OUTPUT</p> <p>"NAND" GATE</p>	<p>Output is "off" only when all inputs are "on". Output is "on" when any or all inputs are "off".</p>
 <p>INPUTS OUTPUT</p> <p>"NOR" GATE</p>	<p>Output is "on" only when all inputs are "off". Output is "off" when any or all inputs are "on".</p>
 <p>INPUTS OUTPUT</p> <p>"OR" GATE</p>	<p>Output is "off" only when all inputs are "off". Output is "on" when any or all of the inputs are "on".</p>

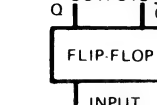
INVERTERS

SYMBOL	CODE
 <p>INPUT OUTPUT</p> <p>INVERTER</p>	<p>Output is "on" only when the input is "off". Output is "off" only when the input is "on".</p>

FLIP-FLOPS

A flip-flop can be compared with a push button switch connected to two lamps. When the button is pushed and released, one of the lamps will turn "on" and the other "off". If the button is again pushed and released, the lamp that was "off" will

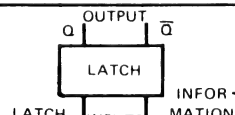
now turn "on" and the lamp that was "on" will turn "off". There are many different types of flip-flops, but they all operate basically in the same way. The difference is in the number and type of inputs.

SYMBOL	CODE
 <p>Q OUTPUTS Q̄</p> <p>FLIP-FLOP</p> <p>INPUT</p>	<p>"Q" output is "on" when "Q̄" output is "off". "Q" output is "off" when "Q̄" output is "on". Outputs change when the input is turned "off".</p>

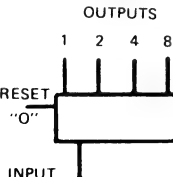
LATCH

A latch is a flip-flop designed to store information until it is needed. It has an extra latch input. When the latch is turned on, the information on the input will be transferred to the "Q" output.

When the latch is turned "off", the information that was on the input at the time the latch was turned off, will be stored on the "Q" output.

SYMBOL	CODE
 <p>Q OUTPUT Q̄</p> <p>LATCH</p> <p>LATCH INPUTS INFORMATION</p>	<p>"Q" output will follow the information input. "Q̄" output will always be the opposite of the "Q" output.</p>

COUNTERS

SYMBOL	CODE
 <p>OUTPUTS</p> <p>1 2 4 8</p> <p>RESET "0"</p> <p>INPUT</p>	<p>As the input is turned "on" and "off" the count is accumulated on the outputs in either binary or decimal form depending on circuit. Counters are easily cascaded by using the highest output as the next input. When full the counter will automatically reset to zero. To use as a "N" divider the reset pin is connected to the required digit plus one.</p>

CIRCUIT LAWS

OHM'S LAW

The relationship between voltage, current and resistance in a circuit is defined by Ohm's law, which may be simply stated by the formula:

$$E = I \times R$$

where E is in volts, I is in amps and R is in ohms. This can be turned around to look like:

$$I = \frac{E}{R}$$

$$R = \frac{E}{I}$$

POWER IN A CIRCUIT

When a current passes through a component, energy is given off in the form of heat. Normally, we associate resistors with this action; that's part of their job. We often need to know how much power is being given off by a resistor - and we find this out by using the formula:

$$W = E \times I$$

where W is in watts, E is in volts and I is in amps. This formula too can be turned around if required:

$$E = \frac{W}{I}$$

$$I = \frac{W}{E}$$

RESISTORS IN SERIES

Resistors in a series circuit are simply added together to find the total resistance. In other words, a 10 ohm, 150 ohm and 1000 ohm-resistor connected in series would be the equivalent of a single 1.160 ohm resistor. The formula is:

$$R_T = R_1 + R_2 + R_3 + \dots$$



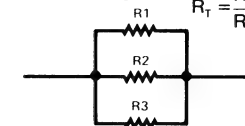
RESISTORS IN PARALLEL

Resistors in a parallel circuit are a little more difficult. The formula to use is:

$$R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots}$$

Two resistors in parallel

$$R_T = \frac{R_1 \times R_2}{R_1 + R_2}$$



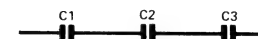
CAPACITORS IN SERIES

Capacitors in series, on the other hand, are similar to resistors in parallel. You add the reciprocals:

$$C_T = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \dots}$$

Two capacitors in series

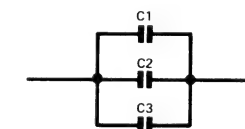
$$C_T = \frac{C_1 \times C_2}{C_1 + C_2}$$



CAPACITORS IN PARALLEL

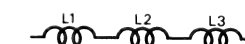
Capacitors behave exactly the opposite to resistors; when capacitors are in parallel, you add them;

$$C_T = C_1 + C_2 + C_3 + \dots$$



INDUCTORS IN SERIES

$$L_T = L_1 + L_2 + L_3 + \dots$$

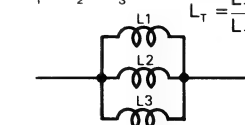


INDUCTORS IN PARALLEL

$$L_T = \frac{1}{\frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3} + \dots}$$

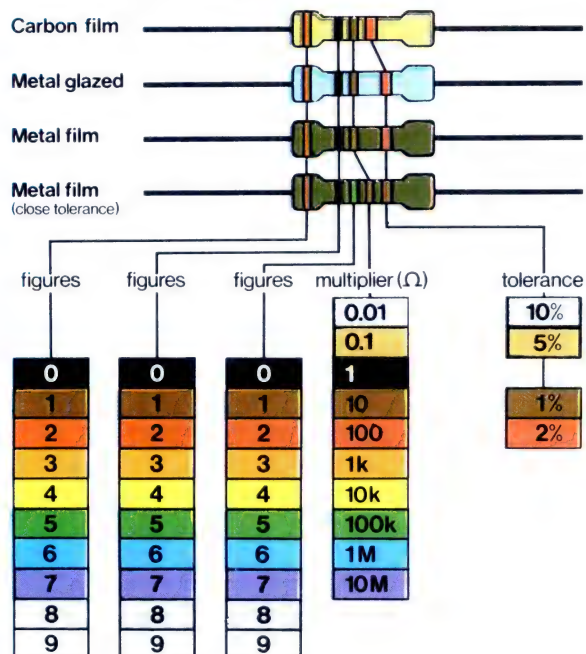
Two inductors in parallel

$$L_T = \frac{L_1 \times L_2}{L_1 + L_2}$$

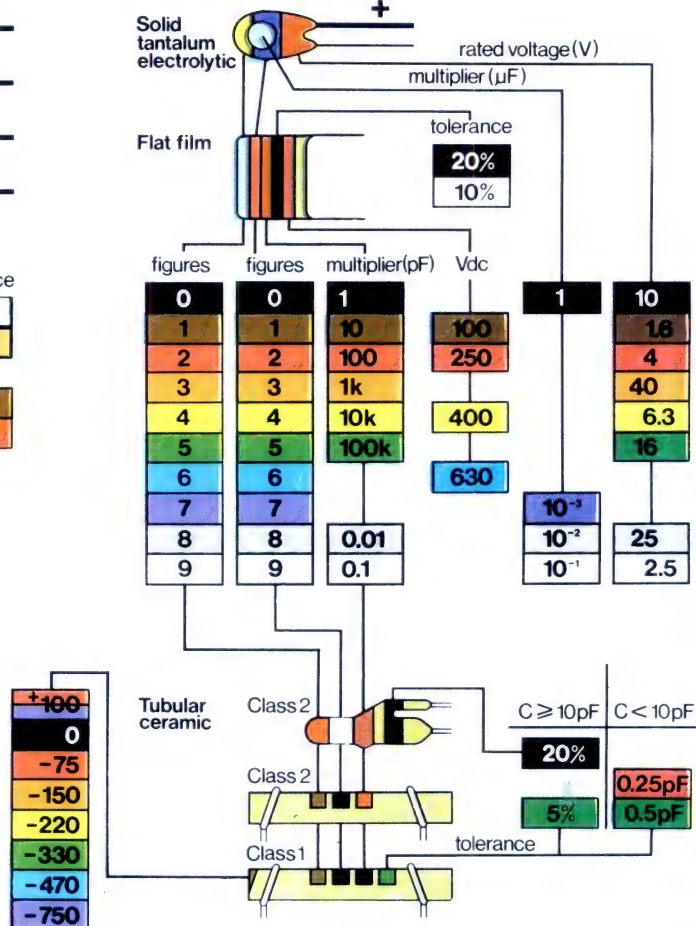


Colour Codes

Resistors



Capacitors



Scotchcal
BRAND
PHOTOSENSITIVE PRODUCTS

PROCESSING PROCEDURE

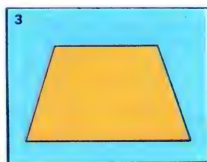
This procedure is suitable for use with the Dick Smith
Scotchcal Black Aluminium Sheet Cat H-5694
Scotchcal Red Aluminium Sheet Cat H-5692
Scotchcal Plastic Exposure Film Cat H-5690



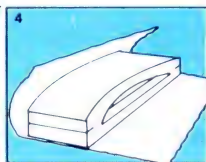
Prepare to expose photosensitive material.
Negative or positive translucent or transparent artwork facing up. For 8007 reversing film, emulsion must be down.



Expose
Photosensitive surface emulsion exposed to ultra-violet light.



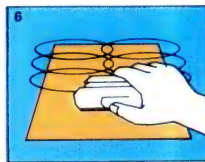
Place exposed photosensitive material on a level surface. Work in safelight conditions.



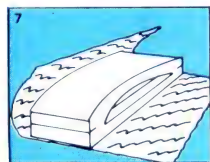
Wrap some cloth or similar soft material around a block to make a developing pad.



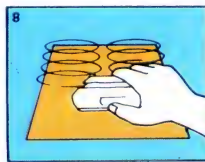
Pour out a small amount of 8500 'SCOTCHCAL' developer onto the exposed material or film. Spread out evenly with a light sweeping motion.



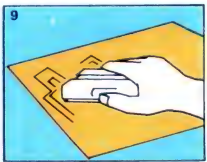
Developing
By using a light 'figure 8' motion on the pad, the unwanted surface emulsion can be removed to a point where most has disappeared.



Turn the cloth on the pad over so you have the fresh side out.



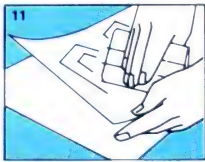
To complete developing, use a light circular motion to remove all unwanted emulsion.



Drying
Wrap a fresh clean cloth around the developer pad and gently wipe any remaining developer from the surface. The job is now complete. Proceed to step 11 if the material doesn't need surface protection. This is the end of the process for exposure film.



If your label or plate requires any surface protection, the surface can be sprayed with Dick Smith Cat. N-1011 Clear Acrylic Spray or 'Scotchcal' 3900 or 3930 Sprays.



Apply the label or plate to a clean surface. Peel back the paper liner from the label. Carefully position the label over the surface that it is to be mounted. Press one edge in place and apply remainder with a soft cloth using firm overlapping strokes.

Do you need a darkroom or special equipment for exposure?
A darkroom is not necessary, all processing can be done in low level incandescent light, just keep clear of sunlight and fluorescent light. You do need an ultra-violet light source. A bank of 2 or 3 Philips Actinic Blue TL40W/05 or Sylvania F20T12BL 20 Watt fluorescent tubes assembled into a suitable contact printer frame can be used. The exposure may take anything from 3 to 15 minutes with this setup. If you don't want to make up this equipment, sunlight will do perfectly, this may require anything from 30 seconds to 7 minutes.

RESISTORS

Resistors are usually so small it is impractical to try and print each one with its value, so they are marked with a code printed on them in bands of different coloured paint. These bands give us the resistor's value.

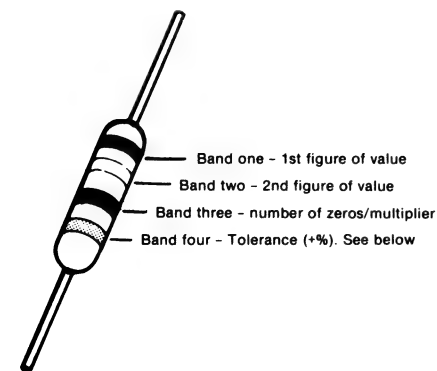
Depending on the tolerance of the resistor there will be either 4 bands (5% E24 Series) or 5 bands (1¼% E96 series).

How to read common 5% resistors (4 bands):

Start with the band closest to one end or, if it is difficult to work out, the band furthest away from the gold or silver band. Take the resistor shown below: let's say that the first band is orange – from the table this means three. If the second band is white, then its value is 9, from the table. And finally if the third band is brown we have a value of 2, so we add one zero to the first two figures: 3, 9 and 0 – or 390 ohms.

The fourth, or tolerance band, is silver: 10%. Therefore, the resistor is 390 ohms, 10% tolerance (or somewhere between 390 –10% and 390 +10%, or 351 and 429 ohms). This is more than adequate for most circuit requirements. Resistors are available which are 'spot on' in value – however, these are not required in most circuits, and are often very, very expensive.

WHAT THEY MEAN:



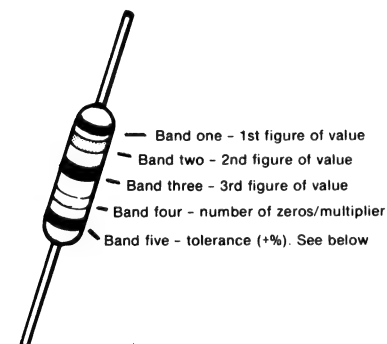
Tolerance band colours: Red 2%, Gold 5%, Silver 10%, No band 20%.

Note how the bands are closer to one end of the resistor than the other.

1% Resistors (5 bands)

These are read in a similar manner. However, the first three bands give a three figure value. The fourth band gives the number of zeros/multiplier and the fifth is the tolerance.

WHAT THEY MEAN:



Tolerance band colours: Brown 1%, Red 2%, Gold 5%, Silver 10%, No band 20%.

Some circuits show capacitor and resistor values as straight figures – e.g. 4.7 pF. Others replace the decimal point with the first letter of the sub-multiple (e.g. 4p7 is the same as 4.7pF). Similarly with resistors: 6k8 means the same as 6.8k.

PREFERRED VALUES

The system of preferred component values was developed to provide a logical progression whereby each higher value always represents an increase by the same factor or percentage, according to the percentage tolerance on which the table is based. (The mathematical term is 'geometric progression'.)

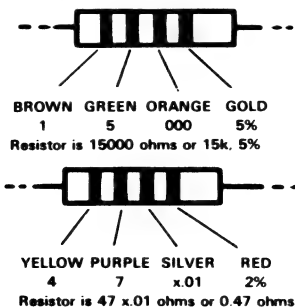
Values given for each series appear in every decade.

series E12 (10%)							
10	12	15	18	22	27	33	39
47	56	68	82				

series E24 (5%)							
10	11	12	13	15	16	18	20
22	24	27	30	33	36	39	43
47	51	56	62	68	75	82	91

series E96 (1¼%)							
100	102	105	107	110	113	115	118
121	124	127	130	133	137	140	143
147	150	154	158	162	165	169	174
178	182	187	191	196	200	205	210
215	221	226	232	237	243	249	255
261	267	274	280	287	294	301	309
316	324	332	340	348	357	365	374
383	392	402	412	422	432	442	453
464	475	487	499	511	523	536	549
562	576	590	604	619	634	649	665
681	698	715	732	750	768	787	806
825	845	866	887	909	931	953	976

RESISTOR VALUE EXAMPLES



METRIC UNITS & CONVERSIONS

Throughout this book, and indeed, most electronic publications, metric multipliers are used to simplify and shorten component values, etc.

For example, capacitance is measured in Farads – but the Farad is a huge unit of measurement, much too large to be of any use in expressing capacitor values. So we use a suitable metric sub-multiple to save a lot of figures. Instead of saying, for example, .000000000001 Farads we say 1 pico Farad (1 pF).

We have used only micro Farads (uF) and pico Farads (pF) in this book; however, some publications use the abbreviation nano Farad (nF) so you should get to know these eventually, too.

Abbreviation	Means	Multiply unit by	Or
p	pico	.000000000001	10 ⁻¹²
n	nano	.000000001	10 ⁻⁹
u	micro	.000001	10 ⁻⁶
m	milli	.001	10 ⁻³
–	UNIT	1	10 ⁰
k	kilo	1 000	10 ³
M	mega	1 000 000	10 ⁶

1000 pico units = 1 nano unit
 1000 micro units = 1 milli unit
 1000 units = 1 kilo unit
 1000 nano units = 1 micro unit
 1000 milli units = 1 unit
 1000 kilo units = 1 mega unit

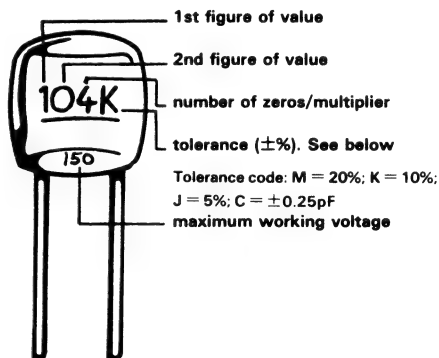
CAPACITORS

Most capacitors will have their value printed on them. However, there are a number of capacitor manufacturers who use the 'IEC' code. This code is a numerical code, but works in a similar way to the resistor colour code: two figures followed by a multiplier. There is often a single letter code showing tolerance.

The code is worked out in picofarads, so you may have to use the appropriate metric multiplier.

A capacitor may have a code '104K'. This decodes as follows – 0.1uF, 10%. The first two figures give us 10, the third figure gives us .0000, and the latter 10%. Therefore, the capacitor is 10 0000pF, 10%. We normally express this as 0.1uF – capacitors with a value below 001uF are expressed in picofarads.

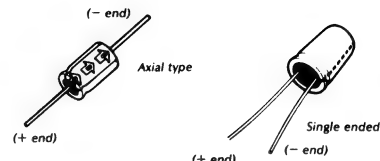
There may be a further figure marked – this would be the voltage rating of the capacitor (the maximum voltage at which you can use that capacitor).



CAPACITORS AND THEIR USES

Aluminium Electrolytic Capacitors

Ideal for use in filtering or smoothing rectified A.C. energy storage as in Power Supplies. Also used for bypassing and coupling in audio applications and the timing element for non critical circuits.



Solid Tantalum Capacitors

Lower leakage High reliability, long life and offer a size advantage.

Ceramic Capacitors

Offer low cost and high capacitance in a small physical volume. There are generally two types:

For tight tolerance and high stability in radio frequency (RF) tuned circuits.

Bypass capacitors in RF and in digital circuits for spike suppression and power supply filtering.

Paper Capacitors

An original construction of capacitors for use in A.C. circuits. Still used for power factor correction in mains supply applications. For example in Lighting and electric motors.

Polyester Capacitors

Lowest cost, most widely used for general purpose application.

Polycarbonate Capacitors

Offer low temperature coefficient and lower dielectric losses at high frequency. Most often chosen for temperature stability characteristics.

Polystyrene Capacitors

Usually chosen for applications requiring tight tolerance coupled with high stability. Predictable temperature coefficient used in conjunction with particular ferrite coils makes highly stable tuned circuits or oscillators.

Polypropylene Capacitors

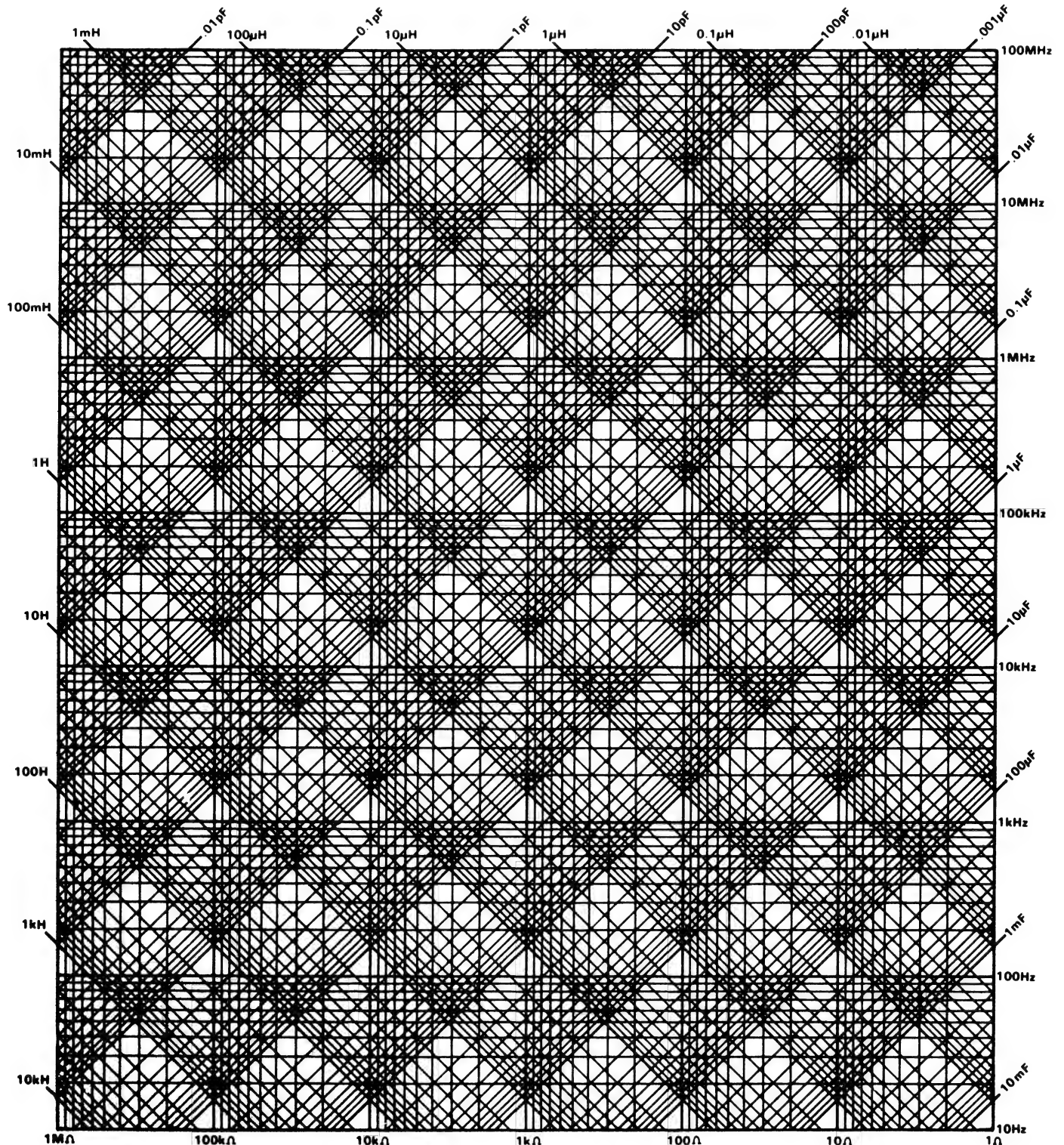
Offer very low dielectric losses rivaling polystyrene. Suitable for high power inverters and converters and T.V. deflection.

REACTANCE-FREQUENCY CHART FOR CAPACITORS, INDUCTORS & TUNED CIRCUITS

To find the reactance of a capacitor at a given frequency, follow the 45° capacitance value line until it intersects the horizontal frequency line, then read downwards to the ohms scale at the bottom. The reactance of an inductor can be read in a similar manner.

The chart can also provide information about resonant circuits. For example, locate where particular values of L & C intersect and read off the resonant frequency. If frequency is known and either L or C, find the intersect and read off the remaining value. Again, by following along a particular frequency line, a variety of LC options for resonance can be determined.

To design simple 6dB/octave speaker crossover networks, follow the appropriate resistance line up to where it intersects the desired crossover frequency and read off the required values of L & C.



SOME AUDIO TERMS EXPLAINED

The specification for the performance of an audio amplifier system will often include terms using decibels above or below (\pm) some standard, usually maximum power output at some stated amount of harmonic distortion. Using the chart it is possible to see what these figures mean in terms of actual power. Since negative values or losses are frequently involved the following table will prove a valuable addition to the chart.

Loss -dB	Power Ratio (approx.)	V or I Ratio (approx.)
0	1.0	1.0
1	0.8	0.9
2	0.6	0.8
3	0.5	0.7
4	0.4	0.6
5	0.3	0.56
6	0.25	0.5
10	0.1	0.3
15	0.03	0.18
20	0.01	0.1
30	0.001	0.03
40	10^{-4}	0.01
50	10^{-5}	0.003

Power Bandwidth: Typically 30Hz to 20,000Hz, at which points the amplifier is only capable of delivering half its rated output without distortion, regardless of input level.

Frequency Response: Typically stated as 20Hz to 20,000Hz \pm 1dB which means a reduction to 0.8 (8/10ths) of maximum power output at these limits.

Signal to Noise Ratio: Typically -80dB relative to maximum power. This gives a ratio of 100,000,000 to 1. If the maximum power output of the amplifier is 100 watts (100,000,000 uW) the noise level at maximum volume should not exceed one micro-watt!

Tone controls or Filters: These may have their performance specified by the altered response they provide at the top or bottom of the audio range, such as "from +15 to -15dB at 50Hz and +13 to -15dB at 10,000Hz", for variable tone controls.

METER SHUNTS & MULTIPLIERS

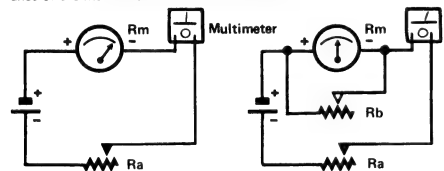
FORMULAS FOR USE WITH DC METER MOVEMENTS

The basic instrument for testing current and voltage is the moving coil meter. The movement can be either be a milliammeter or a microammeter. A resistor in series will convert it to a DC voltmeter or a resistor in parallel will convert it to a DC ammeter.

First, the resistance of the meter movement has to be found.

Connect a variable resistor (R_a) in series with the movement, a multimeter (set to measure current equal to or greater than the movement itself) and a battery as shown. Adjust R_a until full scale deflection is shown on the meter under test. Note the multimeter reading. Now connect a second resistor R_b as shown and adjust it till the reading on the test meter reads half scale. There may be a need to readjust R_a so that the multimeter again reads the first noted value. This will mean that R_b has to be reset to give the correct half scale reading. These procedures may have to be repeated a couple of times to obtain the correct levels.

After getting the correct result, carefully remove R_b from the circuit and measure its value. This measured resistance is equal to the resistance of the meter movement.



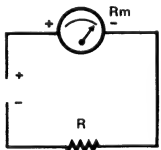
Voltage Multipliers

These ammeter movements can be made to measure voltage by simply adding a series resistance. The formula for calculating this value is as follows:

$$R = \frac{E_s}{I_s} - R_m$$

where,

R is the multiplier resistance in ohms,
 E_s is the full scale reading in volts,
 I_s is the full scale reading in amperes,
 R_m is the meter resistance in ohms.



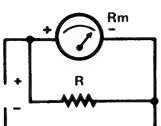
Ammeter Shunts

The value of the current reading can be increased by simply placing a shunt resistor across the movement. The formula for calculating this value is as follows:

$$R = \frac{R_m}{N - 1} = \frac{I_m R_m}{I_s}$$

where,

R is the resistance in ohms,
 R_m is the meter resistance in ohms,
 N is the scale multiplication factor,
 I_m is the meter current,
 I_s is the shunt current.



DECIBELS

Contrary to popular usage and belief the DECIBEL is not a unit of anything, as is the volt or ampere or ohm, but rather a ratio of voltages or currents or power levels in the electronics field. The human ear can detect sounds over a very wide range of power levels but its response is not linear. As the sound level increases the ear's apparent sensitivity decreases. A sound which is doubled in actual intensity does not seem to be twice as loud to the ear.

The ear in fact works on a logarithmic scale hence measurements on sound levels or on equipment that produces sound must be on the same logarithmic scale if they are to make sense.

THE DECIBEL CHART

The chart is the one most suitable for measurements on audio amplifiers and associated equipment, with one scale showing the ratio of power or voltage or current plotted against the decibel scale (dB). If specific examples need to be worked out the following formula can be used:-

$$dB = 10 \log \frac{P_1}{P_2}$$

where P_1 and P_2 are the two power levels. If the output power is greater than the input power then the ratio, in dB, is positive, e.g. +6dB. If the output is less than the input the ratio is expressed as a negative value, e.g. -12dB. In either case P_1 is the larger of the two values.

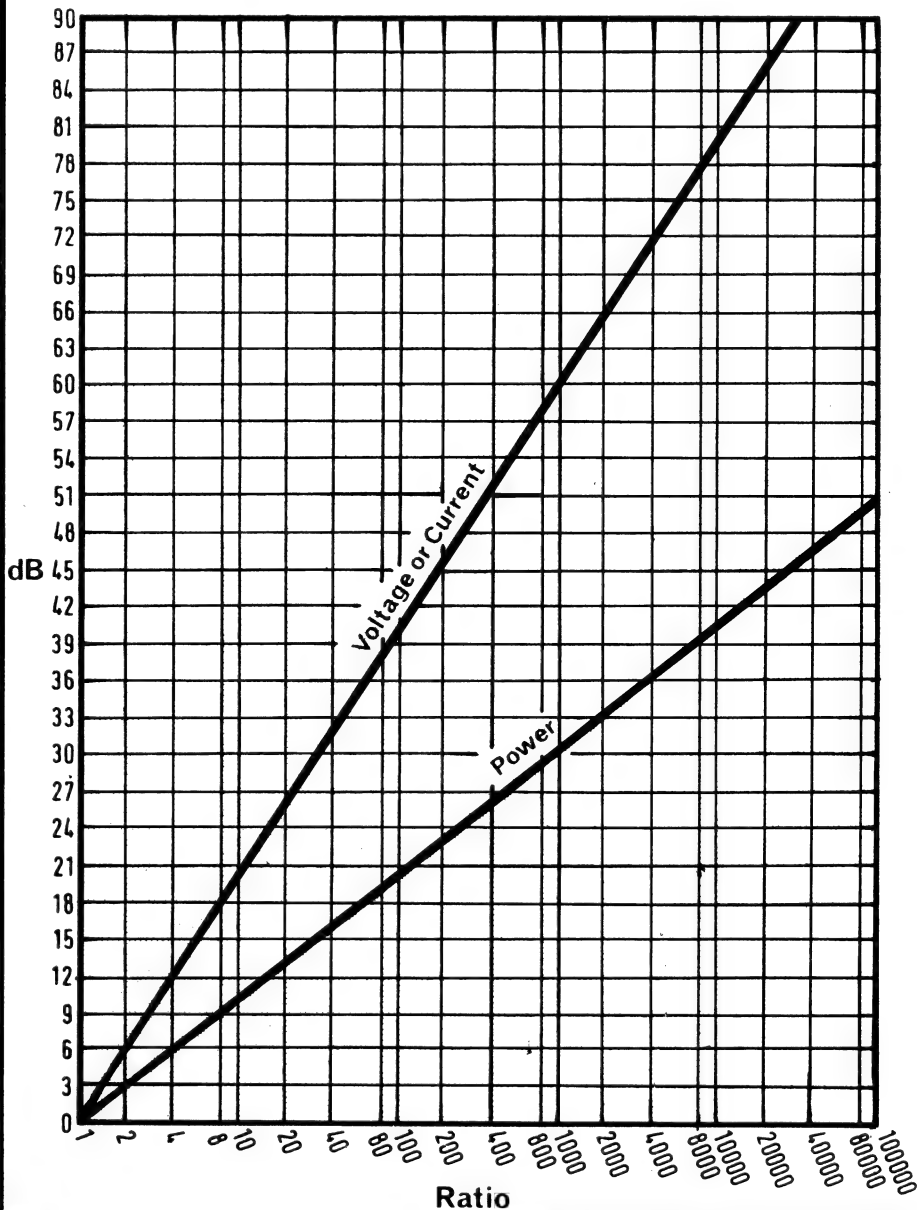
If the voltage or current is being considered the formula becomes:

$$dB = 20 \log \frac{V_1}{V_2}$$

The formula assumes that the input and output impedances are the same. If they are not then due allowance must be made in the formula.

The formula for taking into account differing input and output impedances is:-

$$dB = 20 \log \frac{V_1}{V_2} + 10 \log \frac{Z_1}{Z_2}$$



AVERAGE, RMS, PEAK, AND PEAK-TO-PEAK VALUES FOR A SINE WAVE

Given Value	Multiplying Factor to Get			
	Average	RMS	Peak	Peak-to-Peak
Average	—	1.11	1.57	3.14
Rms	0.9	—	1.414	2.828
Peak	0.637	0.707	—	2.0
Peak-to-Peak	0.32	0.3535	0.5	—

WIRE GAUGES AND WINDING DATA

This table presents the nominal diameter and resistance (to four significant figures) of bare copper wire in various gauges. The gauges are the Brown and Sharpe gauge (B&S, also known as the American Wire Gauge AWG), the Standard Wire Gauge (SWG), and the metric gauge.

The data is given in both imperial and metric units. The diameter in the imperial units is expressed in mils, a mil being 1/1000in.

The resistance would be within plus or minus 2% at 20°C but varies with temperature. The resistance changes approximately 0.4% for each °C change in temperature, increased temperature giving increased resistance.

B&S SWG	Metric	Diam.	Ohms per	Diam.	Ohms per
GAUGES	mm	mils	1,000ft	mm	km
—	4.500	177.2	0.3304	4.500	1.084
7	—	176.0	0.3348	4.470	1.098
6	—	162.0	0.3951	4.116	1.296
—	8	160.0	0.4051	4.064	1.329
—	*4.000	157.5	0.4182	4.000	1.372
7	—	144.3	0.4982	3.666	1.635
—	9	144.0	0.5001	3.658	1.641
—	3.550	139.7	0.5310	3.550	1.742
8	—	128.5	0.6262	3.265	2.061
—	10	128.0	0.6330	3.251	2.077
—	*3.149	124.0	0.6740	3.149	2.212
—	11	116.0	0.7707	2.946	2.529
9	—	114.4	0.7921	2.906	2.599
—	2.800	110.2	0.8534	2.800	2.800
—	12	104.0	0.9588	2.642	4.146
10	—	101.9	0.9989	2.589	3.277
—	*2.500	98.42	1.070	2.500	3.512
—	13	92.00	1.225	2.337	4.020
11	—	90.74	1.260	2.305	4.134
—	2.240	88.18	1.333	2.240	4.375
12	—	80.81	1.588	2.053	5.210
—	14	80.00	1.658	2.032	5.440
—	*2.000	78.74	1.673	2.000	5.488
—	15	72.00	2.001	1.829	6.563
13	—	71.96	2.003	1.828	6.572
—	1.000	70.87	2.065	1.800	6.775
14	—	64.08	2.525	1.628	8.284
—	16	64.00	2.532	1.626	8.307
—	*1.600	62.99	2.614	1.600	8.575
15	—	57.07	3.184	1.450	10.47
—	17	56.00	3.307	1.422	10.85
—	1.400	55.12	3.414	1.400	11.20
16	—	50.82	4.016	1.291	13.18
—	*1.250	49.21	4.282	1.250	14.05
—	18	48.00	4.501	1.219	14.77
17	—	45.26	5.064	1.150	16.61
—	1.120	44.09	5.333	1.120	17.50
18	—	40.30	6.385	1.024	20.95
—	19	40.00	6.482	1.016	21.27
—	*1.000	39.37	6.691	1.000	21.95
—	20	36.00	8.002	0.9144	26.25
19	—	35.89	8.051	0.9119	26.41
—	0.9000	35.51	8.222	0.9000	27.10
—	21	32.00	10.13	0.8128	33.23
20	—	31.96	10.15	0.8120	33.30
—	*0.8000	31.50	10.45	0.8000	34.30
21	—	28.46	12.80	0.7231	41.99
—	22	28.00	13.23	0.7112	43.40
—	0.7100	27.95	13.27	0.7100	43.55
22	—	25.35	16.14	0.6440	52.95
—	*0.6300	24.80	16.85	0.6300	55.31
—	23	24.00	18.00	0.6096	59.07
23	—	22.57	20.36	0.5734	66.80
—	0.5600	22.04	21.33	0.5600	70.00
—	24	22.00	21.43	0.5588	70.30
24	—	20.10	25.67	0.5107	84.22
—	25	20.00	25.93	0.5080	85.06
—	*0.5000	19.69	26.76	0.5000	87.81
—	26	18.00	32.01	0.4572	105.0
25	—	17.90	32.37	0.4548	106.2
—	0.4500	17.72	33.04	0.4500	108.4
—	27	16.40	38.56	0.4162	126.5
26	—	15.94	40.81	0.4050	133.9
—	*0.4000	15.75	41.82	0.4000	137.2
—	28	14.80	47.35	0.3759	155.3
27	—	14.20	51.47	0.3608	168.9
—	0.3550	13.97	53.10	0.3550	174.2
—	29	13.60	56.07	0.3454	184.0
28	—	12.64	64.90	0.3211	212.9
—	*0.3150	12.40	67.45	0.3150	221.2
—	30	12.40	67.45	0.3150	221.2
—	31	11.60	77.07	0.2946	252.9
29	—	11.26	81.83	0.2861	268.5
—	0.2800	11.02	85.34	0.2800	280.0
—	32	10.80	88.91	0.2743	291.7

B&S SWG	Metric	Diam.	Ohms per	Diam.	Ohms per
GAUGES	mm	mils	1,000ft	mm	km
30	—	10.03	103.2	0.2548	338.6
—	33	10.00	103.7	0.2540	340.2
—	*0.2500	9.842	107.0	0.2500	351.2
—	34	9.200	122.5	0.2337	402.0
31	—	8.928	130.1	0.2268	426.8
—	0.2240	8.819	133.3	0.2240	437.5
—	35	8.400	147.0	0.2134	482.2
32	—	7.950	164.1	0.2020	538.4
—	*0.2000	7.874	167.3	0.2000	548.8
—	36	7.600	179.5	0.1930	589.1
—	0.1800	7.087	206.5	0.1800	677.5
33	—	7.080	206.9	0.1799	678.8
—	37	6.800	224.3	0.1727	735.8
34	—	6.305	260.9	0.1602	856.0
—	*0.1600	6.299	261.4	0.1600	857.5
—	38	6.000	288.1	0.1524	945.1
35	—	5.615	329.0	0.1427	1079
—	0.1400	5.512	314.4	0.1400	1120
—	39	5.200	383.5	0.1321	1258
36	—	5.000	414.8	0.1270	1361
—	*0.1250	4.921	428.2	0.1250	1405
—	40	4.800	450.1	0.1219	1477
37	—	4.453	523.1	0.1131	1716
—	0.1120	4.409	533.3	0.112	1750
—	41	4.400	535.7	0.1118	1757
—	42	4.000	648.2	0.1016	2127
38	—	3.965	659.6	0.1007	2164
—	*0.1000	3.937	669.1	0.1000	2195
—	43	3.600	800.2	.09144	2625
—	0.0900	3.551	822.2	.0900	2710
39	—	3.531	831.8	.08971	2729
—	44	3.200	1013	.08128	3323
—	*0.0800	3.150	1045	.0800	3430
40	—	3.145	1049	.07990	3442
41	—	2.801	1323	.07115	4341
—	0.0710	2.795	1327	.0710	4355
42	—	2.494	1669	.06336	5476
—	*0.0630	2.480	1685	.0630	5531
—	46	2.400	1800	.06096	5907
43	—	2.221	2104	.05643	6903
—	0.0560	2.204	2133	.0560	7000
—	47	2.000	2593	.05080	8506
44	—	1.978	2654	.05025	8707
—	*0.0500	1.969	2676	.0500	8781

*First preference values

WINDING DETAILS

The accompanying table allows easy comparison of the different standards, permitting a near equivalent to be selected if coil winding data (for example) specifies a gauge which is not readily available. If 38 B&S were specified for a coil, it can be seen that either 42 SWG or 0.1 mm metric has approximately the same diameter and could therefore be substituted.

B&S	Turns	SWG	Turns	Diam.	Turns
No.	per inch	No.	per inch	mm.	per cm
	Enamelled		Enamelled		Enamelled
8	7.65	10	7.63	4.500	2.158
9	8.58	11	8.33	4.000	2.423
10	9.61	12	9.26	3.550	2.720
11	10.7	13	10.42	3.150	3.060
12	12.0	14	11.90	2.800	3.440
13	13.5	15	13.25	2.500	3.840
14	15.1	16	14.81	2.240	4.280
15	16.9	17	16.95	2.000	4.780
16	18.9	18	19.72	1.800	5.290
17	21.2	19	23.47	1.600	5.940
18	23.7	20	25.97	1.400	6.760
19	26.5	21	29.15	1.250	7.540
20	29.5	22	33.33	1.120	8.390
21	33.1	23	38.91	1.000	9.360
22	37.0	24	42.37	0.900	10.360
23	41.4	25	46.51	0.800	11.610
24	46.5	26	51.55	0.710	13.030
25	52.0	27	56.60	0.630	14.620
26	58.4	28	62.50	0.560	16.240
27	65.3	29	67.57	0.500	20.200
28	73.5	30	74.63	0.450	22.620
29	81.9	31	79.37	0.400	25.300
30	92.5	32	85.47	0.355	28.400
31	103	33	91.74	0.315	31.700
32	114	34	100.0	0.280	35.200
33	129	35	109.9	0.250	39.000
34	144	36	120.5	0.224	43.500
35	161	37	135.1	0.200	47.800
36	181	38	151.5	0.180	53.500
37	204	39	175.4	0.160	60.200
38	227	40	188.7	0.140	67.100
39	256	41	208.3	0.125	74.600
40	285	42	227.3	0.112	82.600

B&S	Turns	SWG	Turns	Diam.	Turns
No.	per inch	No.	per inch	mm.	per cm
	Enamelled		Enamelled		Enamelled
(41)	327	43	256.4	0.100	
(42)	378	44	285.7		
(43)	421	45	322.6		
(44)	471	46	377.4		
(45)	523	47	444.4		
(46)	581	48	—		

In the event that the precise gauge of an available wire is not known, and no micrometer is available, it can be determined quite easily with reasonable accuracy. Wind some of the wire on a small mandrel, such as a pencil, and note the number of turns per unit length. The gauge can now be determined from the tables.

FREQUENCY - WAVELENGTH CONVERSION

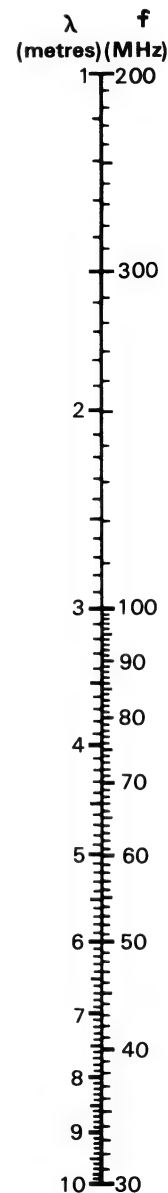
This chart gives the basic conversion from metres to MHz in the range 1-10m and 30-300MHz.

FOR WAVELENGTHS

10m to 100m DIVIDE MHz by 10
100m to 1,000m DIVIDE MHz by 100
1,000m to 10km Answer is in kHz.

FOR FREQUENCIES

30kHz to 300kHz MULTIPLY metres by 1,000
300kHz to 3MHz MULTIPLY metres by 100
3MHz to 30MHz MULTIPLY metres by 10
300 MHz to 3,000 MHz DIVIDE metres by 10



METRIC UNITS AND CONVERSIONS

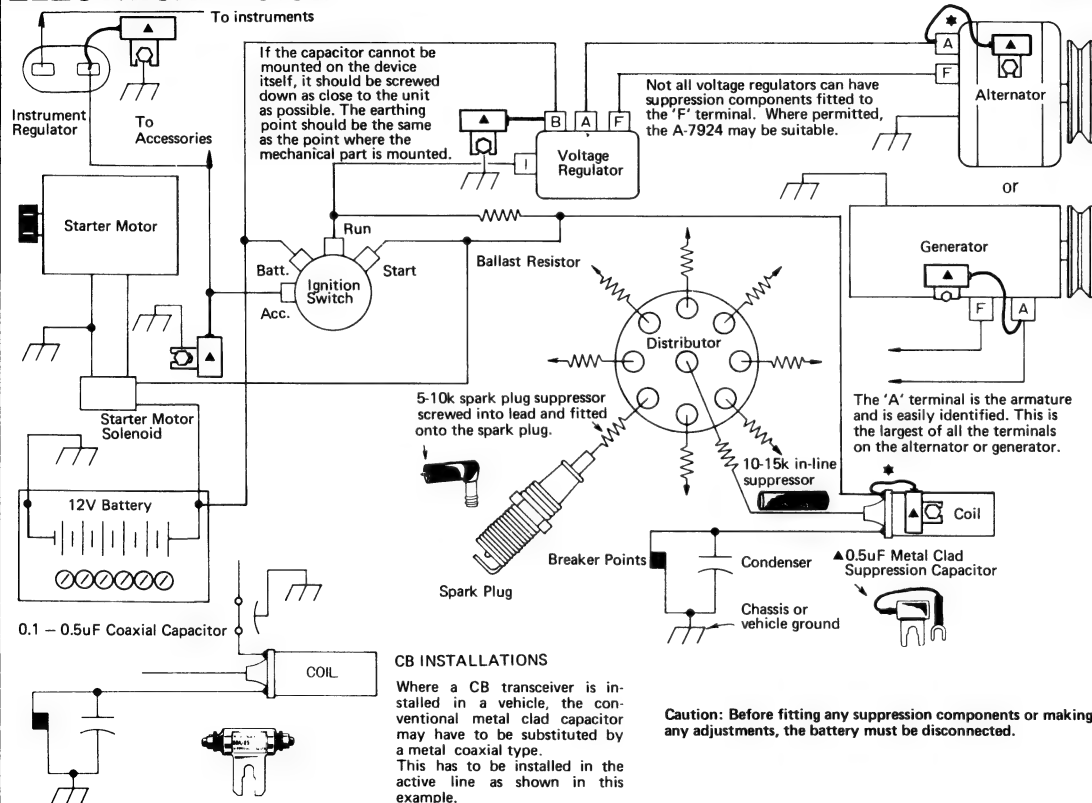
Multiply by ← Into → To Convert				Multiply by ← Into → To Convert			
To convert		Into		To convert		Into	
		Multiply by				Multiply by	
2.296 x 10 ⁻⁵	Acres	Square feet	4.356 x 10 ⁴	6.481 x 10 ⁻²	Grams	Grains	15.43
2.471 x 10 ⁻⁴	Acres	Square metres	4047	28.35	Grams	Ounces (avdp)	3.527 x 10 ⁻²
2.778 x 10 ⁻⁴	Ampere-hours	Coulombs	3600	1.341	Horsepower	Kilowatts	0.746
2.54 x 10 ⁸	Angstrom units	Inches	3.937 x 10 ⁻⁹	0.3937	Inches	Centimetres	2.54
10 ¹⁰	Angstrom units	Metres	10 ⁻¹⁰	10 ⁻³	Kilograms	Tonnes	10 ³
0.02950	Atmospheres	Feet of water	33.90	0.4536	Kilograms	Pounds (avdp)	2.205
0.06804	Atmospheres	Pounds per sq. in.	1470	3.408 x 10 ⁻⁴	Kilometres	Feet	3281
1.0133	Bars	Atmospheres	9.870 x 10 ⁻⁷	9.4637 x 10 ¹²	Kilometres	Light years	1.0567 x 10 ⁻¹³
6.8947 x 10 ⁻²	Bars	Pounds per sq. in.	14.504	0.869	Knots	Miles per hour	1.1508
(°F - 32) x 5/9 = °C	Centigrade	Fahrenheit	(°C x 9/5) + 32 = °F	2.54 x 10 ⁻²	Metres	Inches	39.37
°K - 273.1 = °C	Centigrade	Kelvin	°C + 273.1 = °K	0.6214	Miles (statute)	Kilometres	1.609
3.531 x 10 ⁻²	Cubic feet	Litres	28.32	5.88 x 10 ¹²	Miles (statute)	Light years	1.691 x 10 ⁻¹³
6.102 x 10 ⁻²	Cubic inches	Cubic centimetres	16.39	1.1508	Miles (statute)	Miles (nautical)	0.869
2.832 x 10 ⁻²	Cubic metres	Cubic feet	35.31	10 ⁻³	Millimetres	Microns	10 ³
0.16667	Fathoms	Feet	6	2.205 x 10 ⁻³	Pounds	Grams	453.6
3.281	Feet	Metres	0.3048	746	Watts	Horsepower	1.341 x 10 ⁻³

HANDY REFERENCE CHART FOR IMPERIAL TO METRIC CONVERSION

Inches	Decimal	Millimeters	Inches	Decimal	Millimeters	Inches	Decimal	Millimeters	Inches	Decimal	Millimeters
1/64	.015625	.3969	17/64	.265625	6.7469	33/64	.515625	13.0969	49/64	.765625	19.4469
1/32	.03125	.7937	9/32	.28125	7.1437	17/32	.53125	13.4937	25/32	.78125	19.8437
3/64	.046875	1.1906	19/64	.296875	7.5406	35/64	.546875	13.8906	51/64	.796875	20.2406
1/16	.0625	1.5875	5/16	.3125	7.9375	9/16	.5625	14.2875	13/16	.8125	20.6375
5/64	.078125	1.9844	21/64	.328125	8.3344	37/64	.578125	14.6844	53/64	.828125	21.0344
3/32	.09375	2.3812	11/32	.34375	8.7312	19/32	.59375	15.0812	27/32	.84375	21.4312
7/64	.109375	2.7781	23/64	.359375	9.1281	39/64	.609375	15.4781	55/64	.859375	21.8281
1/8	.125	3.1750	3/8	.375	9.5250	5/8	.625	15.8750	7/8	.875	22.2250
9/64	.140625	3.5719	25/64	.390625	9.9219	41/64	.640625	16.2719	57/64	.890625	22.6219
5/32	.15625	3.9687	13/32	.40625	10.3187	21/32	.65625	16.6687	29/32	.90625	23.0187
11/64	.171875	4.3656	27/64	.421875	10.7156	43/64	.671875	17.0656	59/64	.921875	23.4156
3/16	.1875	4.7625	7/16	.4375	11.1125	11/16	.6875	17.4625	15/16	.9375	23.8125
13/64	.203125	5.1594	29/64	.453125	11.5094	45/64	.703125	17.8594	61/64	.953125	24.2094
7/32	.21875	5.5562	15/32	.46875	11.9062	23/32	.71875	18.2562	31/32	.96875	24.6062
15/64	.234375	5.9531	31/64	.484375	12.3031	47/64	.734375	18.6531	63/64	.984375	25.0031
1/4	.25	6.3500	1/2	.5	12.7000	3/4	.75	19.0500	1	1	25.4

SUPPRESSING AUTOMOTIVE ELECTRICAL NOISE

Warning: Damage may be caused to the vehicles electrical equipment if suppression components are incorrectly installed. If any doubt exists as to how the installation is to be made, specialised help should be sought from a qualified tradesman.



PLEASE NOTE:

Most modern vehicles are fitted with special resistive suppression cable. No other suppression device is required in the high tension system when this is fitted. If your vehicle is an older type, it may be necessary to fit the suppressors shown. An in-line type suppression type resistor is fitted in the HT lead between the coil and the distributor. This should be installed as near to the distributor as possible. In most cases, this suppressor will be all that is necessary to remove impulse ignition noise that is induced into your radio. In cases where noise is still a problem, it may be necessary to fit spark plug suppressors as shown. These are screwed into the lead and fitted onto the plug.

* CAR RADIO INSTALLATIONS

In most car radio installations, it is usually only necessary to have the ignition high tension suppressors and the metal clad capacitors on the coil and alternator. Other points of suppression are only done when absolutely necessary.

IMPORTANT

Before any suppression equipment will operate efficiently, it is most important that the engine is in tune and in top condition. All the wiring has to be in good condition and all the connections tight. Mechanical couplings between the motor and the chassis should be tightened. All earth straps must be in place, broken straps should be replaced.

Caution: Before fitting any suppression components or making any adjustments, the battery must be disconnected.

ASCII CODES

DEC.	HEX	CHAR	DEC.	HEX	CHAR	DEC.	HEX	CHAR
000	00	NUL	043	2B	+	086	56	V
001	01	SOH	044	2C	,	087	57	W
002	02	STX	045	2D	-	088	58	X
003	03	ETX	046	2E	.	089	59	Y
004	04	EOT	047	2F	/	090	5A	Z
005	05	ENQ	048	30	0	091	5B	[
006	06	ACK	049	31	1	092	5C	\
007	07	BEL	050	32	2	093	5D]
008	08	BS	051	33	3	094	5E	^
009	09	HT	052	34	4	095	5F	_
010	0A	LF	053	35	5	096	60	`
011	0B	VT	054	36	6	097	61	a
012	0C	FF	055	37	7	098	62	b
013	0D	CR	056	38	8	099	63	c
014	0E	SO	057	39	9	100	64	d
015	0F	SI	058	3A	:	101	65	e
016	10	DLE	059	3B	;	102	66	f
017	11	DC1	060	3C	<	103	67	g
018	12	DC2	061	3D	=	104	68	h
019	13	DC3	062	3E	>	105	69	i
020	14	DC4	063	3F	@	106	6A	j
021	15	NAK	064	40	A	107	6B	k
022	16	SYN	065	41	B	108	6C	l
023	17	ETB	066	42	C	109	6D	m
024	18	CAN	067	43	D	110	6E	n
025	19	EM	068	44	E	111	6F	o
026	1A	SUB	069	45	F	112	70	p
027	1B	ESC	070	46	G	113	71	q
028	1C	FS	071	47	H	114	72	r
029	1D	GS	072	48	I	115	73	s
030	1E	RS	073	49	J	116	74	t
031	1F	US	074	4A	K	117	75	u
032	20	SPACE	075	4B	L	118	76	v
033	21	!	076	4C	M	119	77	w
034	22	"	077	4D	N	120	78	x
035	23	#	078	4E	O	121	79	y
036	24	\$	079	4F	P	122	7A	z
037	25	%	080	50	Q	123	7B	{
038	26	&	081	51	R	124	7C	|
039	27	'	082	52	S	125	7D	}
040	28	(	083	53	T	126	7E	~
041	29	)	084	54	U	127	7F	DELETE (Rubout)
042	2A	*	085	55				

STANDARD ASCII ABBREVIATIONS

ACK = Acknowledge
 BELL = Bell
 BS = Backspace
 CAN = Cancel
 CR = Carriage Return
 DC1 = Direct Control 1
 DC2 = Direct Control 2
 DC3 = Direct Control 3
 DC4 = Direct Control 4
 DLE = Data Link Escape
 EM = End of Medium
 ENQ = Enquiry
 EOT = End of transmission
 ESC = Escape
 ETB = End Transmission Block
 ETX = End Text
 FF = Form Feed
 FS = Form Separator
 GS = Group Separator
 HT = Horizontal Tab
 LF = Line Feed
 NAK = Negative Acknowledge
 NUL = Null
 RS = Record Separator
 SI = Shift In
 SO = Shift Out
 SOH = Start of Heading
 STX = Start Text
 SUB = Substitute
 SYN = Synchronous Idle
 US = Unit Separator
 VT = Vertical Tab

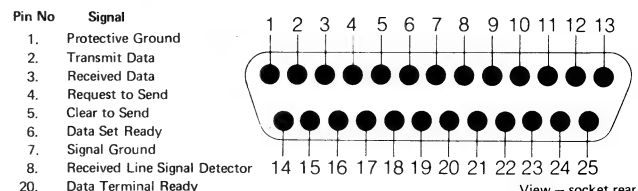
THE RS-232C INTERFACE

The basic RS-232C electrical specifications

Communication rate
 Driver output voltage levels, maximum no load.
 Driver output voltage ranges for loads between 3k and 7k ohms.
 Driver output current, short circuit.
 Driver output impedance with power off.
 Maximum driver output slew rate.
 Receiver input resistance.
 Effective receiver input capacitance.
 Maximum receiver input voltage range.

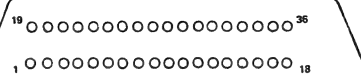
0-20,000 bits per second
 -25V logic 1, +25V logic 0
 logic 1: -15V (7k) and -5V (3k)
 logic 0: +15V (7k) and +5V (3k)
 500mA maximum
 300 ohms minimum
 30 volts per microsecond
 7k ohms maximum, 3k ohms minimum
 2500pF maximum
 -25V to +25V

RS232C CABLE PLUG CONNECTIONS



STANDARD CENTRONICS PRINTER PLUG CONNECTIONS

View - plug rear



Pin No	Signal	Pin No	Signal
19.	Signal Ground	7.	Data Bit 5
2.	Data Bit 0	8.	Data Bit 6
3.	Data Bit 1	1.	Data Strobe
4.	Data Bit 2	10.	Data Acknowledge
5.	Data Bit 3	11.	Input Busy Ready
6.	Data Bit 4		

HEXADECIMAL CONSTANTS

HEX-TO-DECIMAL CONVERSION

For each hexadecimal digit, go down the hex code column at the left until you find the right digit. Then move across to the right column. When all four digits have been converted into their decimal equivalents I, II, III, IV, add these all together to get the final answer, i.e.

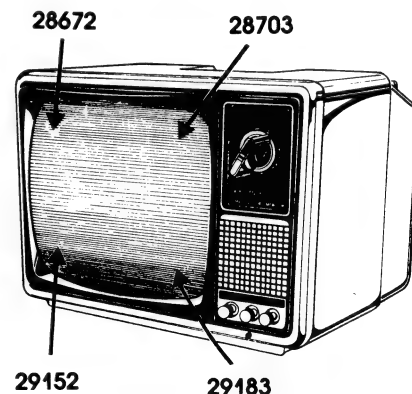
$$\text{DECIMAL VALUE} = \text{IV} \cdot \text{III} + \text{II} + \text{I}$$

HEX CODE Most Significant Bytes Least Significant Bytes

	IV	III	II	I
0	0	0	0	0
1	4096	256	16	1
2	8192	512	32	2
3	12288	768	48	3
4	16384	1024	64	4
5	20480	1280	80	5
6	24576	1536	96	6
7	28672	1792	112	7
8	32768	2048	128	8
9	36864	2304	144	9
A	40960	2560	160	10
B	45056	2816	176	11
C	49152	3072	192	12
D	53348	3328	208	13
E	57344	3584	224	14
F	61440	3840	240	15

ONE BYTE POSITIVE NUMBERS	ONE BYTE NEGATIVE NUMBERS
0 00	-40 08
1 01	-41 07
2 02	-42 06
3 03	-43 05
4 04	-44 04
5 05	-45 03
6 06	-46 02
7 07	-47 01
8 08	-48 00
9 09	-49 CF
10 0A	-50 CE
11 0B	-51 CD
12 0C	-52 CC
13 0D	-53 CB
14 0E	-54 CA
15 0F	-55 C9
16 10	-56 C8
17 11	-57 C7
18 12	-58 C6
19 13	-59 C5
20 14	-60 C4
21 15	-61 C3
22 16	-62 C2
23 17	-63 C1
24 18	-64 C0
25 19	-65 BF
26 1A	-66 BE
27 1B	-67 BD
28 1C	-68 BC
29 1D	-69 BB
30 1E	-70 BA
31 1F	-71 B9
32 20	-72 B8
33 21	-73 B7
34 22	-74 B6
35 23	-75 B5
36 24	-76 B4
37 25	-77 B3
38 26	-78 B2
39 27	-79 B1
40 28	-80 B0
41 29	-81 AF
42 2A	-82 AE
43 2B	-83 AD
44 2C	-84 AC
45 2D	-85 AB
46 2E	-86 AA
47 2F	-87 A9
48 30	-88 A8
49 31	-89 A7
50 32	-90 A6
51 33	-91 A5
52 34	-92 A4
53 35	-93 A3
54 36	-94 A2
55 37	-95 A1
56 38	-96 A0
57 39	-97 9F
58 3A	-98 9E
59 3B	-99 9D
60 3C	-100 9C
61 3D	-101 9B
62 3E	-102 9A
63 3F	-103 99
64 40	-104 98
65 41	-105 97
66 42	-106 96
67 43	-107 95
68 44	-108 94
69 45	-109 93
70 46	-110 92
71 47	-111 91
72 48	-112 90
73 49	-113 8F
74 4A	-114 8E
75 4B	-115 8D
76 4C	-116 8C
77 4D	-117 8B
78 4E	-118 8A
79 4F	-119 89
80 50	-120 88
81 51	-121 87
82 52	-122 86
83 53	-123 85
84 54	-124 84
85 55	-125 83
86 56	-126 82
87 57	-127 81
88 58	-128 80
89 59	-129 7F
90 5A	-130 7E
91 5B	-131 7D
92 5C	-132 7C
93 5D	-133 7B
94 5E	-134 7A
95 5F	-135 79
96 60	-136 78
97 61	-137 77
98 62	-138 76
99 63	-139 75
100 64	-140 74
101 65	-141 73
102 66	-142 72
103 67	-143 71
104 68	-144 70
105 69	-145 6F
106 6A	-146 6E
107 6B	-147 6D
108 6C	-148 6C
109 6D	-149 6B
110 6E	-150 6A
111 6F	-151 69
112 70	-152 68
113 71	-153 67
114 72	-154 66
115 73	-155 65
116 74	-156 64
117 75	-157 63
118 76	-158 62
119 77	-159 61
120 78	-160 60
121 79	-161 5F
122 7A	-162 5E
123 7B	-163 5D
124 7C	-164 5C
125 7D	-165 5B
126 7E	-166 5A
127 7F	-167 59

DECIMAL POKE ADDRESSES FOR VZ-200 AND VZ-300 DISPLAY CORNERS

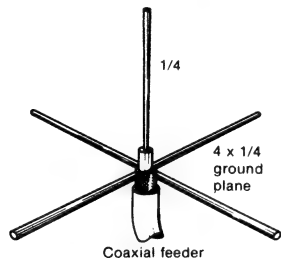


ANTENNA DATA

BASICS

The basic horizontal half wave aerial ($\frac{1}{2}\lambda$). In practice, the physical length required for resonance is reduced by a factor of 0.95 ($0.95 \times \frac{1}{2}\lambda$) due to the effect of insulators and nearby objects. A simple formula for the practical half wave aerial is $143/F$ (MHz) metres. At resonance the induced voltage V will be maximum at the ends of the aerial (high impedance) while the current I will be maximum at the centre.

The basic Marconi aerial is a quarterwave vertical with the lower end close to the ground, and it is used mainly on the lower frequencies. If this aerial is erected over a perfectly conducting ground then an image of the aerial is formed, which simulates a half-wave aerial. In practice the 'perfect' earth is formed from a number of long wires (radials) laid on or just under the surface of the earth.

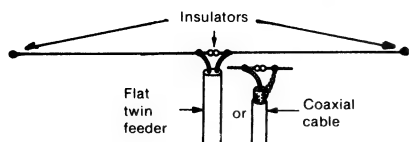


It is not necessary for the aerial wire to be physically the correct length for a particular frequency or wavelength. It can be made shorter or longer electrically to achieve the same state of resonance by using an aerial tuning unit (a.t.u.).

At higher frequencies, such an aerial is commonly mounted well above earth, and relies upon $\lambda/4$ radials entirely for its reflecting "earth plane". Such an aerial is known as a ground-plane.

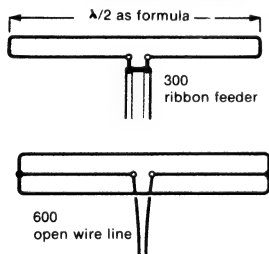
HALF WAVE DIPOLE

As the impedance at the centre of a half-wave aerial is approximately 70 ohms, flat twin or coaxial feeders will provide a good impedance match to the aerial ensuring maximum signal transference. The aerial, length calculated from the formula given, is cut at the centre and an insulator inserted, the wires of the feeder being connected either side of the insulator.



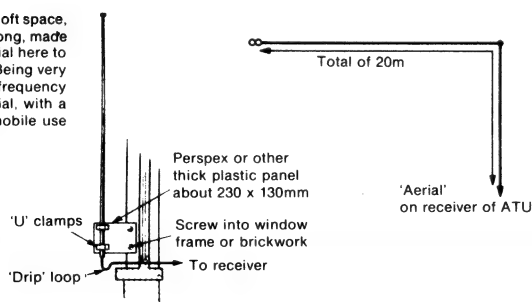
FOLDED DIPOLE

The folded dipole will transform the input impedance by a factor of 2^2 or $4 \times 70 = 280$ ohms so that it can be fed with a flat ribbon feeder of 300 ohms impedance, provided the wires forming the folded dipole are the same diameter. If a three-fold dipole is used, the input impedance will be $70 \times 3^2 = 630$ ohms which will provide a good match to an open line feeder.



RODS AND WHIPS

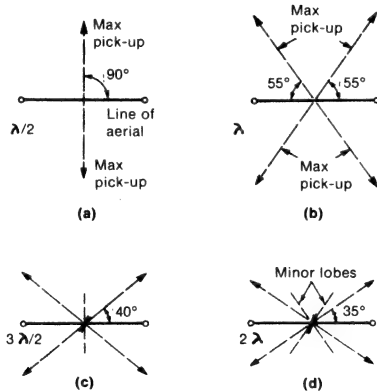
For the unit dweller, often without access to a roof or loft space, the only answer may be a vertical rod aerial 3 or 4m long, made from aluminium or copper tubing. An a.t.u. is essential here to bring the aerial to resonance on the various bands. Being very short this aerial will perform better on the higher frequency bands such as 10 and 15m. A commercial whip aerial, with a base-mounting insulator, of the type intended for mobile use can also be useful in this situation.



DIRECTIVITY

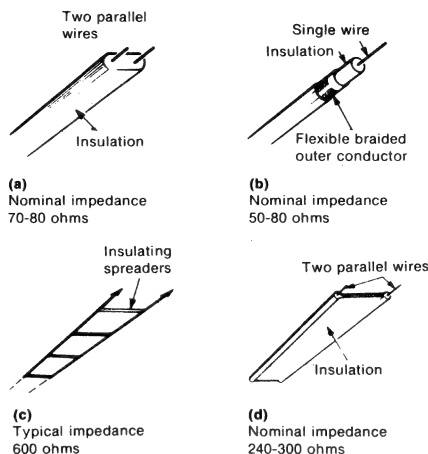
Signal pick-up of a half-wave aerial is maximum at right angles to the line of the wire (a). If the wire is one wavelength long maximum pick-up is from four directions (b). By choosing the right length of aerial and adjusting its orientation the maximum pick-up lobes can be made to cover all the land areas of the world.

Longer aerials result in the appearance of minor lobes (c) and (d) which reduce directivity and improve all round coverage. With an aerial many wavelengths long maximum reception is along the line of the wire.



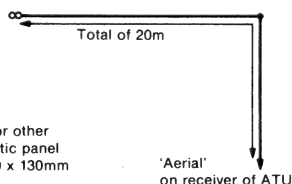
FEEDERS

Since the aerial should be located in the clear and generally as high as possible to produce maximum signal strength it is necessary to use a feeder to connect the aerial to the receiver. Low impedance feeders may be flat twin (a), coaxial (b) or flat ribbon (d). High impedance feeders consist of two wires spaced apart by insulators every foot or so (c).



LONG WIRE

A long length of copper wire, with one end connected to the receiver, is probably the most commonly used aerial. For best results it should be erected out of doors. The inverted "L" aerial is a good all-round performer especially if the vertical section can be 7m or more long. If the overall length is around 20m it will function well on the amateur bands without an aerial tuning unit but an a.t.u. will make it even better. The combination of horizontal and vertical polarisation will help with DX signals where the received signal's polarisation can vary considerably from minute to minute.

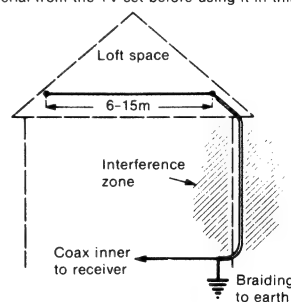


INDOOR

A long wire aerial can be erected in restricted loft spaces and inside roofs even if it means draping it round the rafters! If electrical noise is a problem then the lower part of the aerial can be a length of coaxial cable with the outer screen connected to the receiver chassis or earth.

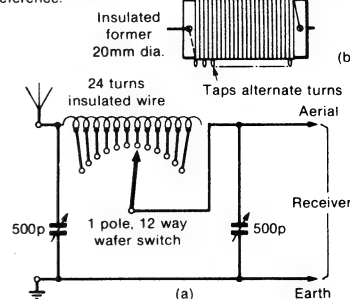
A similar aerial can be strung around a room, and even quite a small room will enable a 12 metre length to be used.

One convenient form of aerial can be obtained by using the coaxial cable of a TV aerial, the outer braiding being connected to the aerial socket of the receiver. Important! — disconnect the TV aerial from the TV set before using it in this form.



AERIAL TUNING UNIT

For best results an end-fed wire aerial or rod aerial should be matched to the receiver input circuit with an Aerial Tuning Unit (a). The inductor (b) is wound making a loop every other turn, the loops then being soldered to the switch tags. Fit each tuning capacitor with a calibrated knob or dial and number the switch positions. Adjust the capacitors and switch position for maximum signal strength noting that the three adjustments are very much interdependent. Log dial and switch readings for future reference.



YAGI

The most common version of the parasitic aerial array, the Yagi, will be familiar to all in its application to v.h.f. and u.h.f. TV and to v.h.f. f.m. sound reception. Its basic form, the "H", is formed by adding a single rod to a half-wave dipole, spaced some small fraction of a wavelength from it. By making the rod slightly longer than the dipole, it acts as a reflector, modifying the response pattern to a cardioid (heartshape) pattern. In practice this is not a perfect cardioid, and there will be an unwanted rear lobe.

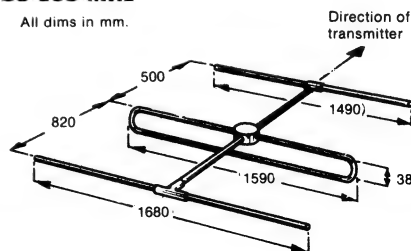
Adding a second rod, slightly shorter than the dipole, on the opposite side to the reflector, will reinforce and narrow the main lobe of the response pattern. A 3-element Yagi suitable for v.h.f. f.m. sound reception is shown. The frequency of maximum response is 95MHz.

Further directors may be added in front of the first, each slightly improving the gain of the aerial array, up to a limit of about 36 elements, after which no significant increase is obtained.

Adding parasitic elements reduces the impedance of the dipole, as seen by the feeder, and a folded dipole is frequently used, to help to compensate for this.

V.H.F. YAGI FOR F.M. RADIO 88-108 MHz

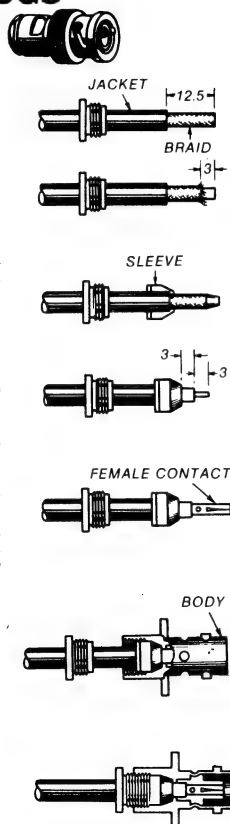
All dims in mm.



WIRING PLUGS

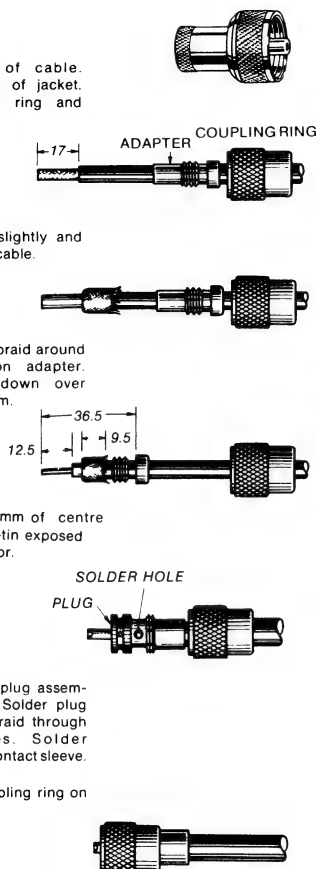
BNC

1. Cut end of cable even.
2. Remove 12.5mm of jacket.
3. Push braid back and remove 3mm of insulation and conductor.
4. Taper braid.
5. Slide sleeve over tapered braid. Fit inner shoulder or sleeve squarely against end of jacket.
6. With sleeve in place, comb out braid, fold back smooth as shown, and trim 2.5mm.
7. Bare centre conductor 3mm.
8. Tin centre conductor of cable. Slip female contact in place and solder. Remove excess solder. *Be sure cable dielectric is not heated excessively and swollen so as to prevent dielectric entering body.*
9. Push into body as far as it will go. Slide nut into body and screw into place, with wrench, until it is moderately tight. Hold cable and shell rigidly and rotate nut.
10. This assembly procedure applies to both BNC jacks and plugs.



PL259 WITH ADAPTORS

1. Cut end of cable. Remove 17mm of jacket. Slide coupling ring and adapter on.
2. Fan braid slightly and fold back over cable.
3. Compress braid around cable. Position adapter. Press braid down over adapter and trim.
4. Bare 12.5mm of centre conductor. Pre-tin exposed centre conductor.
5. Screw the plug assembly on cable. Solder plug assembly to braid through solder holes. Solder conductor to contact sleeve.
6. Screw coupling ring on assembly.



THE PHONETIC ALPHABET

When it is necessary to spell out words, as for example when communication is difficult, or speaking to a station unable to converse fluently in English, the following table may be used.

When it is necessary to spell out figures or marks, the following table should be used:

Figure or mark to be transmitted	Code word to be used	Spoken as
0	NADAZERO	NAH-DAH-ZAY-ROH
1	UNAFONE	OO-NAH-WUN
2	BISSOTWO	BEES-SOH-TOO
3	TERRATHREE	TAY-RAH-TREE
4	KARTEFOUR	KAR-TAY-FOWER
5	PANTAFIVE	PAN-TAH-FIVE
6	SOXISIX	SOK-SEE-SIX
7	SETTESEVEN	SAY-TAY-SEVEN
8	OKTOEIGHT	OK-TOH-AIT
9	NOVENINE	NO-VAY-NINER
Decimal point	DECIMAL	DAY-SEE-MAL
Full stop	STOP	STOP

Letter	Word	Spoken as
A	ALFA	AL FAH
B	BRAVO	BRAH VOH
C	CHARLIE	CHAR LEE
D	DELTA	DELL TAH
E	ECHO	ECK OH
F	FOXTROT	FOKS TROT
G	GOLF	GOLF
H	HOTEL	HOH TELL
I	INDIA	IN DEE AH
J	JULIET	JEW LEE ETT
K	KILO	KEY LOH
L	LIMA	LEE MAH
M	MIKE	MIKE
N	NOVEMBER	NO VEM BER
O	OSCAR	OSS CAR
P	PAPA	PAH PAH
Q	QUEBEC	KEH BECK
R	ROMEO	ROW ME OH
S	SIERRA	SEE AIR RAH
T	TANGO	TAN GO
U	UNIFORM	YOU NEE FORM
V	VICTOR	VIK TOR
W	WHISKY	WISS KEY
X	X-RAY	ECKS RAY
Y	YANKEE	YANG KEY
Z	ZULU	ZOO LOO

THE "Q" CODE

- QRA** What is your station?
QRB How far away are you?
QRC What channel am I on?
QRH Does my frequency vary?
QRK What is my readability?
QRM Are you being interfered with (by other stations - man made interference)?
QRN Are you troubled by noise or static (natural interference - lightning etc.)?
QRP Can you reduce power?
QRT Shall I stop transmitting?
QRY I am on standby unless messages are specifically directed to me.

- QRV** Are you ready?
QRX Wait briefly (e.g. QRX-1; wait 1 minute).
QRZ Who is the station that's calling me.
QSA What is my strength?
QSB Am I fading?
QSL Can you acknowledge receipt (QSL card - card for this purpose).
QSN Did you hear me on —?
QSO Two-way communication between stations.
QSY Will you change to another channel?
QTH What is your location now?
QTR What is the correct time?

MORSE CODE

Morse is an 'Aural' language (that is, received by the ears and not by the eyes). It should never be represented in dot and dash form.

Instead, try to think of Morse as 'dits' and 'dahs'. A 'dit' is a short, sharp note, made by quickly pressing the key and releasing it. A 'dah' should be three times longer than a dit — you hold the key down for three times as long.

- 1 di'dah dah dah dah
- 2 di'di'dah dah dah
- 3 di'di'di'dah dah
- 4 di'di'di'di'dah
- 5 di'di'di'di'dit
- 6 dah di'di'di'dit
- 7 dah dah di'di'dit
- 8 dah dah dah di'dit
- 9 dah dah dah dah dit
- 0 dah dah dah dah dah

The 'International' Morse Code we know today is an adaptation of Morse's original code, called the 'Continental' Code. It differs in only a few respects: if one code is known thoroughly, it is usually possible to reasonably understand the other.

- | | |
|------------------|----------------------------------|
| A di'dah | P di'dah dah dit |
| B dah di'di'dit | Q dah dah di'dah |
| C dah di'dah dit | R di'dah dit |
| D dah di'dit | S di'di'dit |
| E dit | T dah |
| F di'di'dah dit | U di'di'dah |
| G dah dah dit | V di'di'di'dah |
| H di'di'di'dit | W di'dah dah |
| I di'dit | X dah di'di'dah |
| J di'dah dah dah | Y dah di'dah dah |
| K dah di'dah | Z dah dah di'dit |
| L di'dah di'dit | . di'dah di'dah di'dah |
| M dah dah | ? di'di'dah dah di'dit |
| N dah dit | Error di'di'di'di'di'di'di'di'di |
| O dah dah dah | |

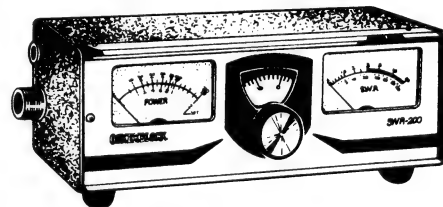
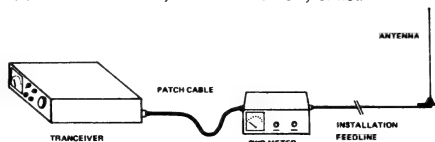
ANTENNA MATCHING & SWR

With any transmitter it is important to match it to the antenna. Otherwise some of the power will not be effectively transmitted but instead reflected back into the transmitter. The SWR meter provides a means of measuring the 'match'.

MEASURING THE SWR

Follow the step-by-step procedure here and you will be surprised how easy it is!

- (1) If you are using a single-meter instrument, switch to read 'forward'.
- (2) Turn the 'sensitivity' control to minimum and then press the transmit button. Quickly adjust the sensitivity control to obtain maximum reading on the meter, or the forward meter on instruments with two meters.
- (3) Now switch to 'reverse' or 'reflected' and the SWR will be indicated on the meter scale. Two meter instruments will show SWR on the 'reflected' meter.
- (4) The table will tell you whether to worry or not!



It is almost impossible to have a perfectly matched antenna system and a standing wave ratio of 1:1 is virtually impossible. Here's what happens to your transmitter power for various standing wave ratios — plus comments.

SWR	PERCENTAGE POWER INTO ANTENNA	COMMENTS
1:1	100%	PERFECT
1.05:1	99.93%	EXCELLENT
1.1:1	99.78%	EXCELLENT
1.2:1	99%	V. GOOD
1.5:1	96%	GOOD
2:1	88%	IMPROVE IF POSSIBLE
2.5:1	82%	IMPROVE IF POSSIBLE
3:1	75%	BAD

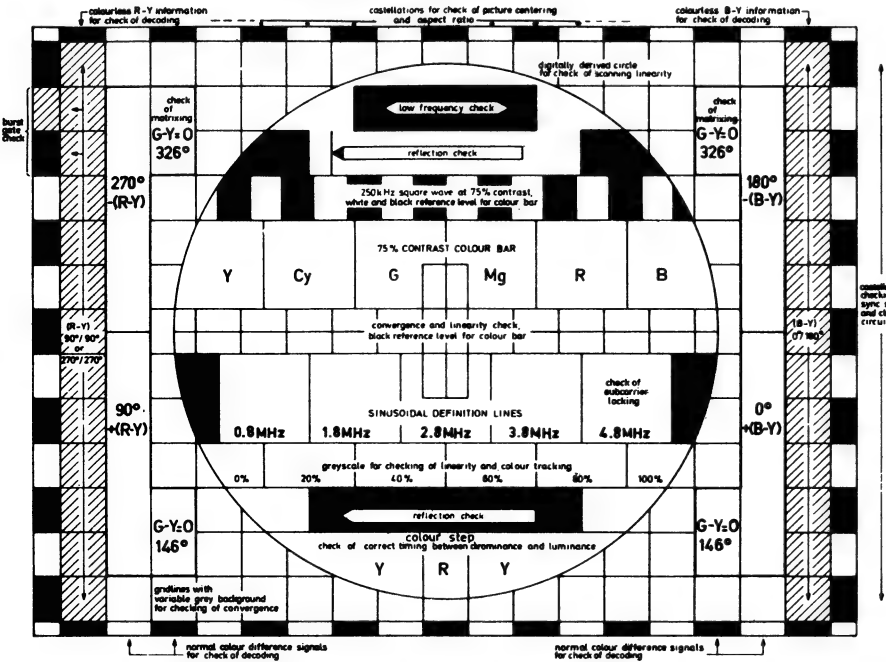
AUSTRALIAN COLOUR TELEVISION TRANSMISSION STANDARDS

Channel Width:	7MHz vestigial sideband transmission
Vision Carrier:	1.25MHz above lower frequency edge of the channel
Sound Carrier:	5.4996MHz above vision carrier
Vision Modulation:	Negative amplitude modulation
Lines Per Picture:	625 lines, interlaced 2:1
Line Frequency:	15,625Hz
Aspect Ratio:	4:3
Hor. Sync Pulse:	4.5uS to 4.9uS with 0.2us to 0.4uS rise time
Hor. Sync Pulse Amp.:	100% carrier amplitude
Front Porch:	1.3uS to 1.8uS
Back Porch:	Line blanking interval - (front porch + sync pulse width)
Line Blanking Interval:	11.8uS to 12.3uS
Black and Blanking Level:	77% of peak carrier level
White Level:	20% of peak carrier level
Pre-equalising Pulse Interval:	2.5H (H=line period, 64uS)
Post-equalising Pulse Interval:	2.5H
Field Sync Pulse Interval:	2.5H
Field Blanking Interval:	25H + 12uS
Peak Vision Carrier Power	Ratio : 10:1
Peak Sound Carrier Power	
Sound Modulation:	Frequency modulation
Sound Deviation:	± 50kHz

COLOUR TRANSMISSION CHARACTERISTICS

Colour Coding System:	PAL (delay)
Colour Sub-carrier:	4.43361875MHz (± 5Hz)
E'Y:	0.299E' R + 0.587E' G + 0.114E' B
E'U:	0.493(E' B - E' Y)
E'V:	0.877 E' R - E' Y)
Gamma of Picture Tube:	2.8: Correction at camera of Ec 0.457
Limits of Chrominance:	+0.57 to -1.3MHz for both V and U components
Sideband Components:	As the result of E'Ysin 2πfSCt ± E' v cos 2πfSCt
Reference White:	CIE D6500° = x = 0.313, y = 0.329
Colour Burst Amplitude:	PtoP -40% of black level to white level
Colour Burst Duration:	10 cycles commencing 5.6us after leading edge of line sync pulse
	*Black Body temperature in°Kelvin(°C + 273.16)

PHILIPS PM 5544 T.V. TEST PATTERN (Courtesy of Philips Industries Ltd.)



AUSTRALIAN VHF & UHF TELEVISION CHANNELS

VHF		
Channel	Vision Carrier Frequency (MHz)	Frequency Limits (MHz)
0	46.25	45-52
1	57.25	56-63
2	64.25	63-70
3	86.25	85-92
4	95.25	94-101
5	102.25	101-108
5A	138.25	137-144
6	175.25	174-181
7	182.25	181-188
8	189.25	188-195
9	196.25	195-202
10	209.25	208-215
11	216.25	215-222
UHF		
Channel	Vision Carrier Frequency (MHz)	Frequency Limits (MHz)
Band IV		
28	527.25	526-534
29	535.25	534-542
30	543.25	542-550
31	551.25	550-558
32	559.25	558-566
33	567.25	566-574
34	575.25	574-582
Band V		
39	615.25	614-622
40	623.25	622-630
41	631.25	630-638
42	639.25	638-646
43	647.25	646-654
44	655.25	654-662
45	663.25	662-670
46	671.25	670-678
47	679.25	678-686
48	687.25	686-694
49	695.25	694-702
50	703.25	702-710
51	711.25	710-718
52	719.25	718-726
53	727.25	726-734
54	735.25	734-742
55	743.25	742-750
56	751.25	750-758
57	759.25	758-766
58	767.25	766-774
59	775.25	774-782
60	783.25	782-790
61	791.25	790-798
62	799.25	798-806
63	807.25	806-814

VHF AIRCRAFT CHANNELS

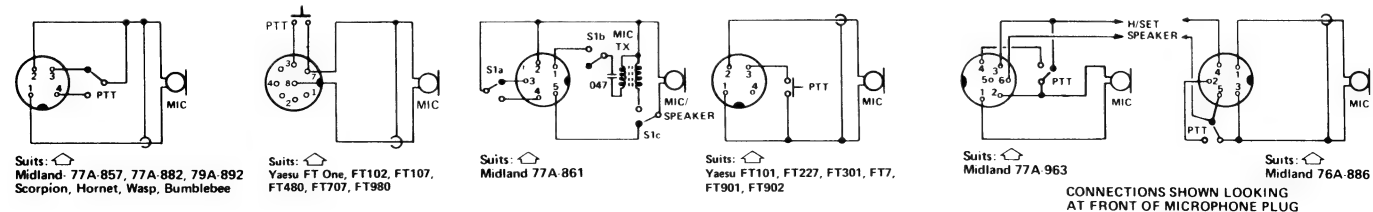
FREQ.	CHANNEL USAGE
118.1	Bankstown & other Secondary Towers
118.7	Canberra/Parafield Tower
118.9	Melbourne Departure
119.1	Club Frequency
119.4	Sydney Approach
120.5	Adel/Bris/Melb/Syd Tower
120.9	Auto Information Serv. (Secondary airports)
121.1	Area frequency
123.0	Sydney Departure
124.2	Adelaide Approach
124.4	Sydney Approach
124.7	Bris/Melb Approach
125.3	Sydney Departure
125.8	Area Frequency

AERODROME TERMINAL INFORMATION

A.M. MODE

ADELAIDE	117.3 MHz
SYDNEY	115.4 MHz
PERTH	113.7 MHz
CAIRNS	113.7 MHz
CANBERRA	113.5 MHz
ROCKHAMPTON	116.9 MHz
BRISBANE	113.9 MHz
MELBOURNE	113.9 MHz
ALICE SPRINGS	115.9 MHz
DARWIN	113.7 MHz
PORT HEADLAND	113.7 MHz

TRANSCIVER MICROPHONE CONNECTIONS



BROADCAST STATIONS

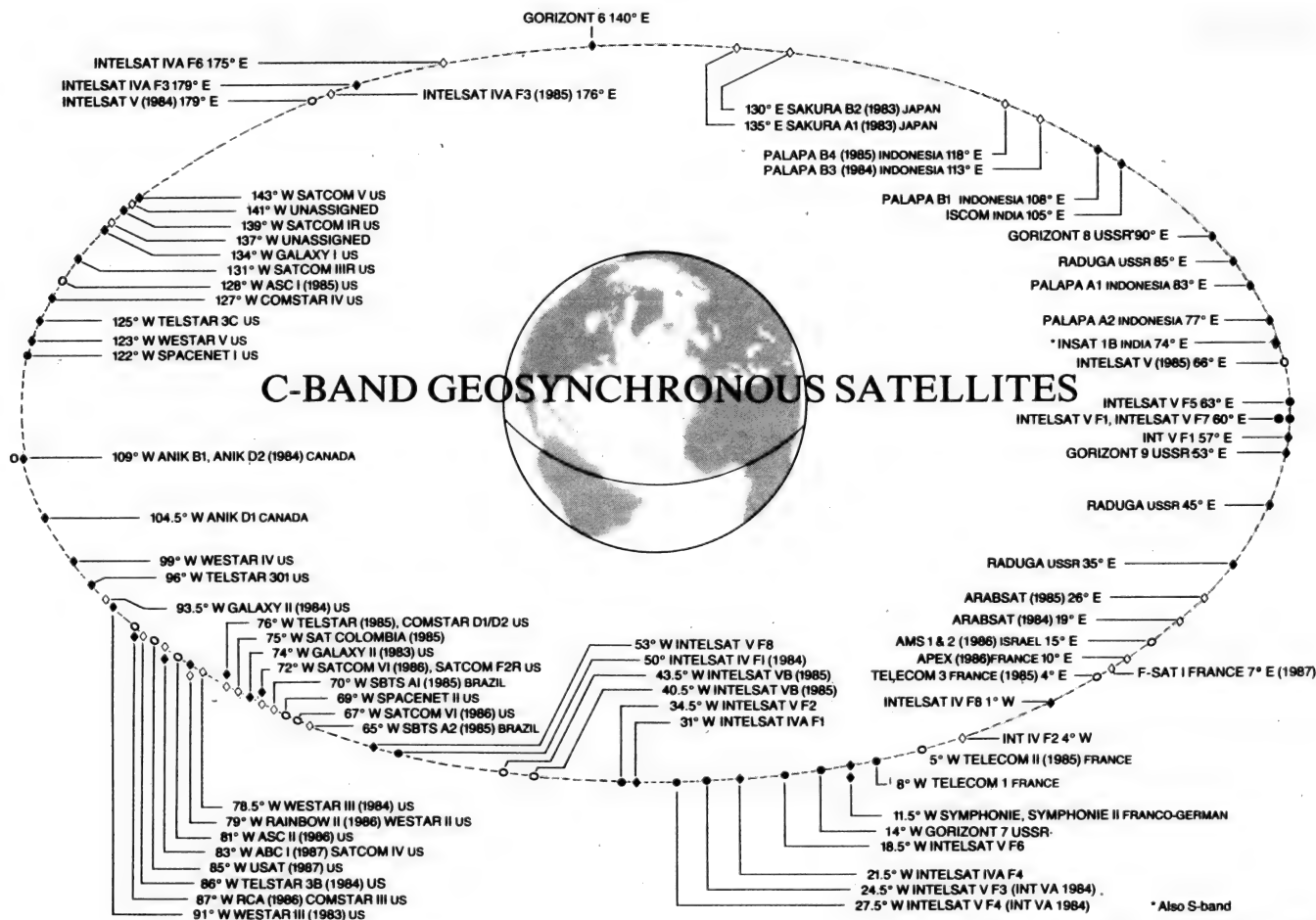
AM STATIONS

LOCATION	CALL-SIGN	FREQ. (kHz)	LOCATION	CALL-SIGN	FREQ. (kHz)	LOCATION	CALL-SIGN	FREQ. (kHz)	LOCATION	CALL-SIGN	FREQ. (kHz)
NEW SOUTH WALES						WESTERN AUSTRALIA			QUEENSLAND		
Armidale	2AD	1134	Sydney	2UE	954	Albany	6AL	630	Oakley	4AK	1242
Armidale	2AN	720	Muswellbrook	2UH	1044	Northam	6AM	864	Atherton	4AM	558
Albury	2AY	1494	Sydney	2UW	1107	Broome	6BE	675	Atherton	4AT	720
Bega	2BA	810	Moree	2VM	1530	Busselton	6BS	684	Ayr	4AY	936
Bega	2BE	765	Wilcannia	2WA	1584	Bridgetown	6BY	900	Brisbane	4BC	1116
Moruya (Translator)	2BE-T	765	Bourke	2WEB	576	Carnarvon	6CA	846	Brisbane	4BH	882
Broken Hill	2BH	567	Wagga	2WG	1152	Collie	6CI	1134	Brisbane	4BK	1296
Sydney	2BL	702	Wollongong	2WL	1314	Derby	6DB	873	Bundaberg	4BU	1332
Bathurst	2BS	1503	Wollongong	2WN	1431	Dalwallinu	6DL	531	Cairns	4CA	846
Byrock	2BY	657	Sydney	2WS	1224	Esperance	6ED	837	Gladstone	4CD	927
Canberra	2CA	1053	Cooma	2XL	918	Geraldton	6GE	1008	Biloela (Translator)	4CD-T	927
Canberra	2CC	1206	Canberra	2XX	1008	Kalgoorlie	6GF	648	Gold Coast	4GG	1197
Sydney	2CH	1170				Geraldton	6GN	828	Charters Towers	4GC	1170
Canberra	2CN	1440				Perth	6IX	1080	Gympie	4GM	1566
Albury	2CO	675	VICTORIA			Karratha	6KA	1260	Toowoomba	4GR	864
Cooma	2CP	1602	Melbourne	3AK	1503	Kalgoorlie	6KG	981	Gympie	4GY	558
Orange	2CR	549	Melbourne	3AR	621	Kununurra	6KW	756	Hughenden	4HU	1485
Campbelltown	2CT	1602	Melbourne	3AW	1278	Perth	6KY	1206	Ipswich	4IP	1008
Canberra	2CY	846	Ballarat	3BA	1314	Merridin	6MD	1099	Julia Creek	4JK	567
Dubbo	2DU	1251	Bendigo	3BO	945	Mount Newman	6MN	567	Brisbane	4KQ	693
Newcastle (Translator)	2EA-T	1584	Colac	3CS	1134	Narrogin	6NA	918	Innisfail-Tully	4KZ	531
Sydney	2EA	1386	Melbourne	3CR	837	Northam	6NM	612	Longreach	4LG	1098
Wollongong (Translator)	2EA-T	1485	Melbourne	3CV	1071	Perth	6NR	927	Mount Isa	4LM	1368
Sydney	2FC	576	Maryborough	3DB	1026	Port Hedland	6NW	1026	Maryborough	4MB	1161
Sydney	2GB	873	Melbourne	3EA	1224	Port Hedland	6PH	603	Mount Isa	4MI	1080
Grafton	2GF	1206	Sale	3GI	828	Perth	6PM	990	Mackay	4MK	1026
Glen Innes	2GL	819	Geelong	3GL	1341	Perth	6PR	882	Mossman	4MS	639
Goulburn	2GN	1368	Hamilton	3HA	981	Bunbury	6TZ	963	Nambour	4NA	828
Gosford	2GO	1323	Melbourne	3KZ	1179	Albany	6VA	783	Mackay	4QA	756
Orange	2GZ	1089	Melbourne	3LO	774	Wagin	6WA	558	Maryborough	4QB	855
Newcastle	2HD	1143	Mildura	3MA	1467	Katanning	6WB	1071	Emerald	4QD	1548
Katoomba	2KA	783	Ormeo	3MT	720	Perth	6WF	720	Brisbane	4QG	792
Penrith (Translator)	2KA-T	1476	Wangaratta	3NE	1566	Wyndham	6WH	1017	Longreach	4QL	540
Kempsey	2MC	531	Swan Hill	3SH	1332	Perth	6WN	810	Townsville	4QN	630
Newcastle	2KO	1413	Shepparton	3SR	1260	Exmouth	6XM	1188	Eidsvoll	4QO	855
Kempsey	2KP	684	Sale	3TR	1242				Brisbane	4QR	612
Sydney	2KY	1017	Warragul	3UL	531				Toowoomba	4QS	747
Young	2LF	1359	Melbourne	3UZ	927				St. George	4QW	711
Lithgow	2LG	1485	Warrnambool	3WL	1602				Cairns	5QY	801
Lismore	2LM	900	Horsham	3WV	594				Rockhampton	4RK	837
Lithgow	2LT	1395	Warrnambool	3YB	882				Rockhampton	4RO	990
Mudgee	2MG	1449	Melbourne	3XY	1422				Kingaroy	4SB	1071
Murwillumbah	2ML	720	Horsham	3YX	1089	SOUTH AUSTRALIA			Southport	4SO	1593
Gunnedah	2MO	1080	Frankston	3MP	1377	Adelaide	5AA	1386	Thursday Island	4TI	1062
Murwillumbah	2MW	972	Wangaratta	3WA	756	Adelaide	5AD	1323	Townsville	4TO	774
Newcastle	2NA	1512				Port Augusta	5AU	1242	Charleville	4VL	918
Broken Hill	2NB	999	TASMANIA			Port Pirie	5CK	639	Warwick	4WK	963
Newcastle	2NC	1233	Devonport	7AD	900	Adelaide	5CL	729	Weipa	4WP	1044
Muswellbrook	2NM	1458	Burnie	7BU	558	Adelaide	5DN	972	Roma	4ZR	1476
Grafton	2NR	738	Launceston	7EX	1008	Adelaide	5KA	1197			
Tamworth	2NU	648	Fingal	7FG	1161	Leigh Creek	5LC	1602			
Bolwarra	2NX	1341	Hobart	7HO	864	Port Lincoln	5LN	1485			
Inverell	2NZ	1188	Hobart	7HT	1080	Mount Gambier	5MG	1584	NORTHERN TERRITORY		
Wollongong	2OO	1575	Launceston	7LA	1098	Murray Bridge	5MU	1458	Alice Springs	8AL	1377
Parkes	2PZ	1404	Launceston	7NT	711	Naracoorte	5PA	1161	Darwin	8DN	1242
Deniliquin	2QN	1521	Launceston	7QN	630	Crystal Brook	5PI	1044	Darwin	8DR	657
Taree	2RE	1557	Queenstown	7QT	837	Renmark	5RM	801	Gove	8GO	990
Griffith	2RG	963	Queenstown	7SD	540	Mount Gambier	5SE	1296	Alice Springs	8HA	900
Sydney	2SM	1269	St. Helens	7SH	1548	Streaky Bay	5SY	693	Jabiru	8JB	747
Nowra	2ST	999	Hobart	7ZL	603	Adelaide	5UV	531	Katherine	8KN	675
Tamworth	2TM	1287	Hobart	7ZR	936	Woomera	5WM	1584	Tennant Creek	8TC	684
Taree	2TR	756									

FM STATIONS

MHz	Call Sign	Power (kW)	Location	MHz	Call Sign	Power (kW)	Location	MHz	Call Sign	Power (kW)	Location	MHz	Call Sign	Power (kW)	Location
89.7	2VTR	0.02	M Windsor Colo	93.7	3MBS	4	H Melbourne	103.5	3GCR	0.05	M Churchill	106.1	2ABC	25	H Newcastle
	5PBA	0.25	M Elizabeth		4ABC	50	H Rockhampton		3MBR	0.5	V Murrayville		4ABC	50	H Brisbane
					5MMM	4	M Adelaide	103.7	2NUR	3	M Newcastle	106.3	3ABC	100	M Bendigo
90.1	2NBC	0.1	V Narwee	93.9	7ABC	27	M Hobart	103.9	3CCC	2	V Castlemaine		3RPC	0.035	M Portland
91.5	2NSB	0.08	V Chatswood	96.1	6NOW	10	M Perth		4TTT	0.05	M Townsville	107.1	2AAA	0.2	M Wagga Wagga
92.1	5ABC	10	H Adelaide	97.5	6ABC	50	H Perth	104.1	2CHY	0.04	V Coffs Harbour		3ABC	100	H Traralgon
	6UVS	5	M Perth						2DAY	35	M Sydney	107.5	2ABC	50	M Griffith
	7THE	3	H Hobart	101.5	4ABC	65	H Townsville		4MMM	6	M Brisbane		2SER	4	
92.3	2ARM	0.1	H Armidale	101.9	2ABC	50	V Canberra		5ABC	150	H Mt Gambier				M Adelaide
	2MCE	1	V Bathurst		3FOX	10	M Melbourne		8TOP	10	M Darwin	107.7	3PBS	0.1	M Melbourne
	3EON	10	M Melbourne	102.1	4ZZZ	6	M Brisbane	104.3	3ABC	50	M Albury/ Wodonga	107.9	2ABC	25	M Wollongong
92.5	2NCR	3	M Lismore		8CCC	0.125	V Alice Springs						2REM	0.3	M Albury
92.9	2ABC	50	H Sydney	102.3	3ABC	100	H Mildura	104.9	2MMM	35	M Sydney		4ABC-FM	50	M Toowoomba
	2ABC	10	V Orange	102.5	2MBS	10	M Sydney	105.1	5ABC	95	V Loxton				
	5EBI	4	M Adelaide	102.7	3RRR	10	M Melbourne	105.3	3ABC	50	H Ballarat				
	6NEW	0.25	H Newman		4DDB	2	H Toowoomba	105.7	2ABC	50	M Wagga Wagga				
93.3	6ABC	60	H Bunbury	103.2	2CBA	10	M Sydney		2JJJ	10	H Melbourne				
	7ABC	120	H Launceston	103.3	4MBS	2	M Brisbane								
					7HFC	1.5	M Hobart								

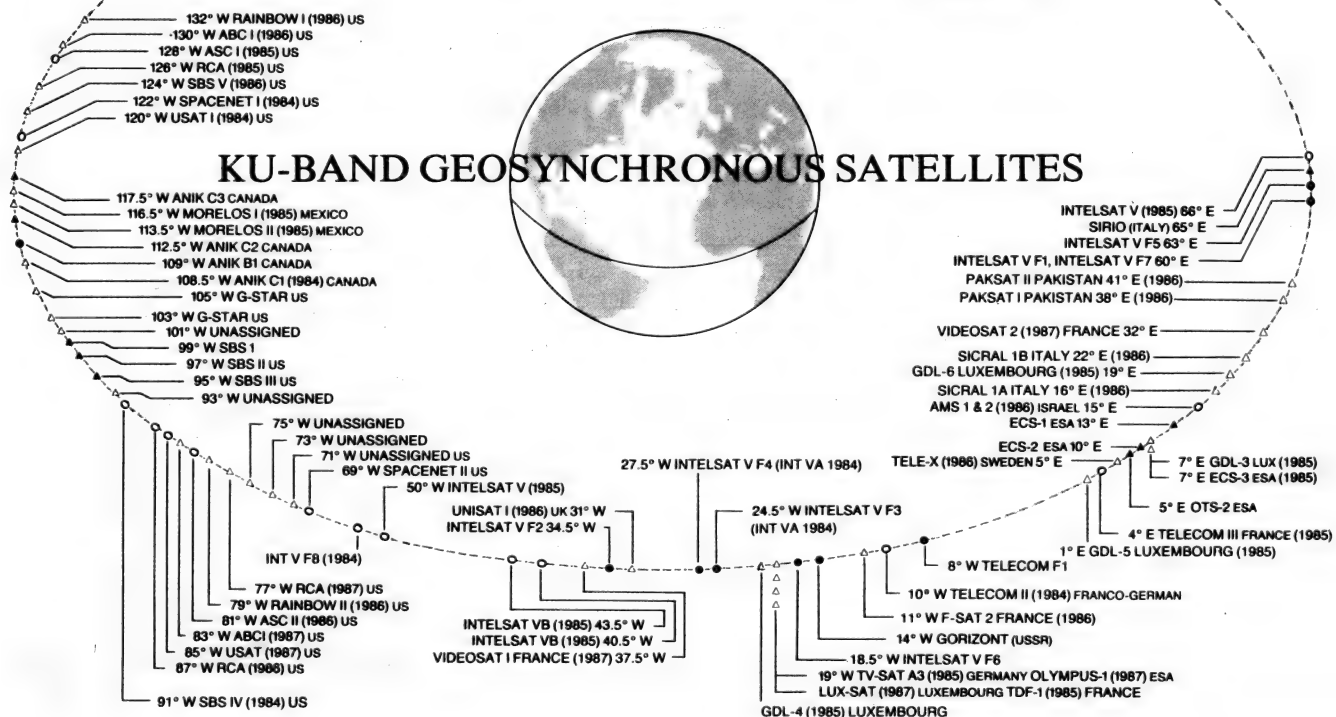
NOTES:
H Horizontal
V Vertical
M Mixed



BAND	C	K	BOTH
EXISTING	◆	▲	●
PROPOSED	◇	△	○

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BSE-2, BS-2A (1984) 110° E
 BS-2B (1985) JAPAN



CB RADIO CHANNELS

HF 40 Channel Australian Standard

Channel No.	Frequency MHz
1	26.965 21
2	26.975 22
3	26.985 23
4	27.005 24
5	27.015 25
6	27.025 26
7	27.035 27
8	27.055 28
9 emergency	27.065 29
10	27.075 30
11	27.085 31
12	27.105 32
13	27.115 33
14	27.125 34
15	27.135 35
16	27.155 36
17	26.165 37
18	27.175 38
19	27.185 39
20	27.205 40

UHF 40 Channel Australian Standard

Channel No.	Frequency MHz
1	476.425 21
2	476.450 22
3	476.475 23
4	476.500 24
5 emergency	476.525 25
6	476.550 26
7	476.575 27
8	476.600 28
9	476.625 29
10	476.650 30
11	476.675 31
12	476.700 32
13	476.725 33
14	476.750 34
15	476.775 35
16	476.800 36
17	476.825 37
18	476.850 38
19	476.875 39
20	476.900 40

Licences for CB equipment can be obtained from the Department of Communication for an annual fee.
There are at present 40 channels available on the HF Band.

There are also 40 channels available on the UHF CB Band as listed.
Further information may be obtained from the Department of Communication at an office nearest you.

27MHz MARINE FREQUENCIES

Frequency MHz	Channel Use
27.680	Commercial Organisations. Domestic ship-shore-ship and intership, calling and working.
27.720	Professional Fishermen.
27.820	Domestic, ship-shore-ship, calling and working.
27.860	Professional Fishermen. Intership.
27.880	Amateur Organisations. Alternate calling and working for distress, emergency and safety messages for weather and position reports.
27.900	Distress calling only.
27.910	Amateur Organisations.
27.940	Domestic ship-shore-ship, calling and working.
27.960	Amateur Organisations.
27.980	Club events, ship-shore-ship and intership, calling and working.
	Amateur Organisations. Intership.
	Surf rescue.

AMATEUR BAND PLAN

160 metres – 1.8 to 1.86MHz full licence only

1.8 to 1.815MHz Morse section
1.815 to 1.860MHz voice section
1.825MHz national call channel
1.820MHz also a popular crystal net

80 metres – 3.5 to 3.8MHz full or limited licence

3.525MHz to 3.625MHz is the Novice Band in Australia
3.5 to 3.550 MHz Morse section
3.550 to 3.7MHz voice section
3.7 to 3.75MHz is the US Novice Band
3.565MHz is a popular Novice listing and working channel
3.794 to 3.8MHz full licence only

40 metres – 7.0 to 7.3MHz full licence only

7.1 to 7.15MHz is the American Novice Band
7.0 to 7.035MHz Morse segment
7.035 to 7.3MHz voice segment
7.05MHz national listening channel, some AM stations but mainly Morse and LSB

30 metres – 10.1 – 10.15MHz full licence only

20 metres – 14.0 to 14.35MHz full licence only

14.0 to 14.1MHz, Morse, 14.1 to 14.35 MHz, voice
14.1 to 14.2MHz popular in Europe
14.2 to 14.35MHz popular in the USA

15 metres – 21.0 to 21.45MHz novice and full licence

21.125 to 21.2MHz is the Novice Band in Australia
21.0 to 21.15MHz is Morse
21.15 to 21.45MHz is voice
21.1 to 21.2MHz is the US Novice Band
In the US, voice is 21.25 to 21.45MHz. Morse is 21.0 to 21.25MHz.

12 metres – 24.89 to 24.99MHz full licence only

10 metres – 28.0 to 29.7MHz novice and full licence

28.1 to 28.6MHz is the Australian Novice Band
28.1 to 28.2MHz is the US Novice Band
28.0 to 28.5MHz is the American Morse section
28.5 to 29.7MHz is the voice section
28.5MHz is the national calling frequency in Australia
28.55MHz is a popular international channel
28.6MHz is the international DX listening frequency
29.6MHz International FM calling channel, 29.3 to 29.5MHz used for communicating through the American and Russian Amateur Radio orbiting satellites.

A 23 channel system has been organised for modifying 11 metre rigs to 10 metres. The range is from 28.3 to 28.59MHz.

CHAN	FREQ	CHAN	FREQ
1	28.30	13	.45
2	.31	14	.46
3	.32	15	.47
4	.34	16	.49
5	.35	17	.50
6	.36	18	.51
7	.37	19	.52
8	.39	20	.54
9	.40	21	.55
10	.41	22	.56
11	.42	22a	.57
12	.44	23	.59

6 metres – 50 to 50.15, 52 to 54MHz full or limited licence

2 metres – 144 to 148MHz full or limited licence

70cm – 420 to 450MHz

full or limited licence

All bands above: full or limited licence

LICENCING

The Department of Communications conducts during the year examinations for Amateur Radio Operators Certificate of Proficiency at centres throughout Australia. There are four classes of licence:-

Type 1 - Amateur Operation Certificate of Proficiency (AOCP)-

Type 2 - Amateur Operators Limited Certificate of Proficiency (AOLCP)-

Type 3 - Novice Amateur Operators Certificate of Proficiency (NAOCP)-

Type 4 - Combined Limited/Novice

Requirements for this licencing are:

AOCP – Knowledge of radio communication, operation and design of receivers, transmitters, aerials and basic theory. Send and receive in plain language International Morse Code to a speed of 10 words per minute (WPM). The knowledge of the regulations covering operation of Amateur Radio Stations.

AOLCP – As above but no Morse Code examination required.

NAOCP – As per AOCP but of a lower standard with questions having multiple answers, Morse Code to 5WPM and regulations. This is a very easy exam to pass.

AOCP All amateur bands (see details elsewhere). Maximum power input 400 W PEP, 150 W AM.

AOLCP All amateur bands above 52MHz. Maximum power input 400 W PEP, 150 W AM.

NAOCP 3.525 to 3.625MHz-
21.125 to 21.200MHz
28.100 to 28.600MHz
Maximum power input 30 W PEP, 10 W AM, crystal locked on transmit.

2m SIMPLEX CHANNEL NUMBERS AND FREQUENCIES

Channel No.	Frequency MHz	WIA Band Plan Recommended use for specific frequencies
New	Old	
6425	-	146.425 Sec voice channel
6450	49	146.450 Pri voice channel
6475	-	146.475 Sec voice channel
6500	50	146.500 National call chan.
6525	-	146.525 Sec voice channel
6550	51	146.550 Pri voice channel
6575	-	146.575 Sec voice channel
6600	52	146.600 National RTTY
7400	68	147.400 ATV liaison
7425	-	147.425 National
7450	69	147.450 ATV/SSTV/FAX

Channel No.	Frequency MHz	WIA Band Plan Recommended use for specific frequencies
New	Old	
7475	-	147.475 SSTV/FAX liaison
7500	70	147.500 Not specific
7525	-	147.525
7550	71	147.550 Micro. Net
7575	-	147.575
7600	72	147.600 Data Net

Notes:

1. Recommended use is for guideline purposes only.
2. Use of 146.000MHz (old channel 40) is not recommended as it interferes with the satellite band.

AUSTRALIAN AMATEUR FREQUENCIES

1.800 to 1.860MHz	52.000 to 54.000MHz
3.500 to 3.700MHz	144.00 to 148.00MHz
3.794 to 3.800MHz	420.00 to 450.00MHz
7.000 to 7.300MHz	576.00 to 585.000MHz
10.100 to 10.150MHz	1240.00 to 1300.00MHz
14.000 to 14.350MHz	2300.00 to 2450.00MHz
18.068 to 18.168MHz	3300.00 to 3600.00MHz
21.000 to 21.450MHz	5650.00 to 5850.00MHz
24.890 to 24.990MHz	10000.00 to 10500.00MHz
28.000 to 29.700MHz	24000.00 to 24250.00MHz

NOVICE FREQUENCIES

3.525 to 3.625MHz	28.100 to 28.600MHz
21.125 to 21.200MHz	

AMATEUR REPEATERS & BEACONS

REPEATERS

NSW	CALL SIGN	CHAN NO	SITE	VICTORIA	CALL SIGN	CHAN NO	SITE	WESTERN AUSTRALIA	CALL SIGN	CHAN NO	SITE
2m				2m				2m			
Western Blue Mountains	VK2RDX	6650	Mt. Bindo	Shepparton	VK3RGV	6650	Mt. Wombat	Bunbury	VK6RSW	6650	Roelands
Nth. Coast, Coffs Harbour	VK2RCH	6650	Coffs Harbour	Melbourne	VK3RML	6700	Mt. Dandenong	Perth	VK6RAP	6700	Roleystone
New England, Moree/Inverell	VK2RMI	6650	Terri Hi Hi	Ballarat	VK3RBA	6750	Mt. Bunningyong	Albany	VK6RAL	6700	Albany
Sydney RTTY	VK2RTY	6675	NW Sydney	Latrobe Valley	VK3RLV	6800	Mt. Tassie	Perth	VK6RTH	6800	Tic Hill
Mid North Coast	VK2RPM	6700	Port Macquarie	Mildura	VK3RMA	6800	Mildura Airport	Albany	VK6RAA	6800	Mt. Barker
Central West, Orange	VK2RAO	6700	Mt Canobolas	Mount Macedon	VK3RMM	6850	Mt. Macedon	Bunbury	VK6RBY	6900	Mt. William
Mid South Coast, Ulladulla	VK2RMU	6700	Milton	Swan Hill	VK3RSH	6900	Swan Hill	Tom Price	VK6RTP	6900	Mt. Tom Price
Central Coast – Gosford	VK2RAG	6725	Somersby	East Gippsland	VK3REG	6900	Mt. Sugarloaf	Perth	VK6RPD	6950	Wait Bently
Far South Coast – Bega	VK2RFS	6750	Mt. Mumbulla	Grampians	VK3RWZ	6950	Mt. William	Emergency	VK6REE	6975	RPTR Group Sec
New England – Tamworth	VK2RTM	6750	Mt. Sterling	Geelong	VK3RGL	7000	Mt. Anakie	Emergency	VK6REE	7000	RPTR Group Pri
Riverina – Wagga	VK2RWG	6750	Mt. Flackney	Wedonga	VK3RNE	7000	Mt. Big Ben	Wagin	VK6RAW	7000	Mt. Latham
Far North Coast, Lismore	VK2RIC	6800	Parrots Nest	South Gippsland	VK3RSG	7100	Gippsland	Kalgoorlie	VK6RAK	7000	Kalgoorlie
Sydney, South	VK2RLE	6800	Heathcote	Bendigo	VK3RCV	7150	Mt. Alexandria	Geraldton	VK6RGN	7000	Geraldton
Western Plains, Dubbo	VK2RCC	6800	Mt. Cenncrick	Melbourne	VK3RTY	7350	Mt. Dandenong	Port Hedland	VK6RNW	7000	Port Hedland
Murrumbidgee, Griffith	VK2RGF	6850	Mt. Binda	Melbourne	VK3REC	7175	Mt. Dandenong	Perth	VK6RWC	7100	Lesmurdie
South Coast, Wollongong	VK2RAW	6850	Mt. Murray	West Gippsland	VK3RWG	7225	Buln-Buln				
New England, Gunnedah	VK2RGB	6850	Porcupine Res.					6m			
Sydney Northern Beaches	VK2RMB	6875	Terry Hills					Perth			
Newcastle, Hunter Valley	VK2RAN	6900	Mt. Sugarloaf	70cm							
Western Plains, Condobolin	VK2RRT	6900	Boona Mt.	Melbourne	VK3ROU	8225	Mt. Dandenong		VK6RSW	3200	Perth
Sydney, Lower Nth. Shore	VK2RGR	6925	Ryde	Melbourne	VK3RAD	8525	Burwood	70cm			
New England, Glen Innes	VK2RNE	6950	Mt. Rumble	Wodonga	VK3RNU	8525	Mt. Stanley	Perth	VK6RUF	8525	Roleystone
Sydney, Metro.	VK2RWI	7000	Dural	Melbourne	VK3RMU	8675	Melbourne				
Blue Mountains	VK2RBM	7050	Mt. Tomah	Mount Jackson	VK3RCU	9275	Mt. Macedon	TASMANIA			
Sydney Eastern Suburbs	VK2ROT	7075	Paddington	Portable	VK3RWI	8625	VIC WICEN	2m			
Newcastle, L. Macquarie	VK2RTZ	7100	Newcastle	Grampians	VK3RWU	8075	Mt. William	Hobart	VK7RHT	6700	Mt. Wellington
Central West – Parkes	VK2RWM	7100	Canowindra	Gippsland	VK3RGU	8375	Carrajuing	North West Coast	VK7RNN	6750	Ulverstone
Statewide Emergency	—	7125	WICEN Port. No 1	Shepparton	VK3RSU	9425	Mt. Wombat	North East Coast	VK7RAA	7000	Mt. Barrow
Sydney WICEN	VK2RWS	7150	Chatswood	Geelong	VK3RBU	9575	Geelong	East Coast	VK7..	6900	
Statewide Emergency	—	7175	WICEN Port. No. 2					NORTHERN TERRITORY			
South Coast	VK2RSD	7200	Cambewarra	6m				2m			
Sydney (SSTV)	VK2RST	7225	Lane Cove West	Melbourne	VK3RMH	3900	Hurstbridge	Alice Springs	VK8RCA	7000	Alice Springs
Sydney Upper Nth. Shore	VK2RNS	7250	Hornsby		VK3RTN	3675	Mt. Dandenong				
Wollongong – Coastal	VK2RST	7275	Sublime Point					QUEENSLAND			
Southern Highlands, Mittagong	VK2RHR	7350	Mittagong	ACT				2m			
Sydney – South West	VK2RLD	7375	Campbelltown	2m				Gold Coast	VK4RGC	6700	Mt. Tamborine
				Canberra	VK1 RAC	6900	Black Hill	Rockhampton	VK4RAR	6700	Rockhampton
				ACT	VK1 RGI	6950	Mt. Ginini	Townsville	VK4RAT	6700	Mt. Stuart
70 CM								Bundaberg	VK4RBU	6800	Mt. Goonaneman
Central Coast	VK2RAG	8075	Somersby	70cm				North Coast	VK4RNC	6850	Mt. Nambour
South Coast	VK2RUW	8225	Port Kembla	Canberra	VK1 RUC	8525	Canberra City	Ipswich	VK4RAI	6900	Mt. Crosby
Sydney, WICEN	VK2RWS	8275	Chatswood					Gladstone	VK4RGB	6900	Caliope Range
Mid North Coast	VK2REE	8325	Taree					Cairns	VK4RCA	6950	Mt. Belleden Ker
Blue Mountains	VK2RUT	8375	Mt. Tomah					Brisbane	VK4RBN	7000	Mt. Glorious
Sydney, Southern Suburbs	VK2RUH	8425	Hurstville					Mackay	VK4RMK	7000	NE Mackay
Sydney, Western Suburbs	VK2RRS	8475	Parramatta					Brisbane	VK4RBT	7050	Mt. Cotton
Sydney, General	VK2RWI	8525	Dural					Darling Downs	VK4RDD	7100	Toowoomba
Newcastle, Coastal	VK2RUM	8625	Merewether H.	SOUTH AUSTRALIA				Bundaberg	VK4RBS	7250	Mt. Goonaneman
Newcastle, Hunter Valley	VK2RAN	8675	Mt. Sugarloaf	2m				Mount Isa	VK4RMI	6800	Mt. Isa
Far North Coast, Lismore	VK2RSC	8675	Mt. Nardi	Mid North	VK5RMN	6750	The Bluff	Brisbane	VK4RQT	7300	Brisbane
North Wollongong	VK2RIL	8725	Sublime Point	Adelaide	VK5RHO	6800	Houghton	70cm			
				Adelaide	VK5RAD	7000	Crafers	North Coast	VK4RNC	8075	Mt. Nambour
				Mount Gambier	VK5RMG	6900	Mt. Gambier	Gold Coast	VK4RGC	8225	Mt. Tamborine
				Eyre Peninsula	VK5REP	6800	Cowell	Brisbane	VK4RBC	8525	Mt. Cootha
								Bundaberg	VK4RBU	8675	Mt. Goonaneman
								Brisbane	VK4R--	8375	Brisbane South

Future VK2 development will include channels 9275 to 9975.

BEACONS

10m BEACONS

FREQ	CALL SIGN	LOCATION
28.2025	9J2B	Chicotimi
28.205	DL0IGI	Mt. Predightstul
28.2075	W4ESY	Englewood Fla.
28.210	3B8MS	Mauritius
28.2125	ZD9GI	Gough Island
28.215	GB3SX	Crowborough
28.2175	VE2TEN	(reserved)
28.220	5B4CY	ZYYI
28.225	BE8AA	Lake Contwoyto
28.230	ZL2MHF	Upper Hut
28.235	VP9BA	Southampton
28.2375	LA5TEN	Oslo
28.240	OA4CK	Lima
28.2425	A9XC	Hamala
28.2425	ZS1CTB	Cape Town
28.2475	EA2HB	San Sebastian
28.2525	VE3TEN	Chicontini
28.2575	DK0TE	Konstanz
28.260	VK5WI	Adelaide
28.262	VK2RSY	Sydney
28.264	VK6RTV	Perth
28.266	Z22JV	Salisbury
28.266	VK6RTW	Albany
28.270	VK4RTC	Townsville
28.270	ZS6PW	Pretoria
28.2725	TU2ABJ	Abidjan
28.275	VE3TEN	Ottawa
28.2775	DFOAAB	Luetjenberg
28.280	YV5AYV	Caracas
28.2825	W9---	(reserved qrp)
28.285	VP8ADE	Adelaide Island
28.2875	W8---	Tuckasagee N.C.
28.290	V56HK	Cape D'Aquilar
28.295	VU2BCN	Bangalore
28.315	ZS6DN	Johannesburg
28.888	W6IRT	N. Hollywood Cal.

6m BEACONS

FREQ	CALL SIGN	LOCATION
50.005	H44HIR	Honiara
50.005	ZS5VHF	Natal, S. Africa
50.008	JA2IGY	Mie
50.020	GB3SIX	Anglesey
50.020	HH2PR	Haiti
50.025	6Y5RC	Jamaica
50.035	ZB2VHF	Gibraltar
50.036	HC1JX	Quito
50.038	FY7THF	French Guiana
50.040	WA6MHZ	San Diego
50.048	VE6ARC	Alberta
50.050	ZS3E	South Africa
50.060	PY2AA	Sao Paulo
50.065	KH6EQI	Pearl Harbour
50.070	YV5ZZ	Caracas
50.075	VS6SIX	Hong Kong
50.080	TI2NA	Costa Rica
50.088	VE1SIX	New Brunswick
50.103	F08DR	Tahiti
50.103	AH8A	American Somoa
50.498	5B4CY	Cyprus
51.020	ZL1UHF	Auckland
52.013	P29SIX	New Guinea
52.150	VK5KK	Artherton
52.200	VK6VF	Darwin
52.250	ZL2VHM	Palmerston North
52.300	VK6RTV	Perth
52.320	VK6RTT	Carnarvon
52.325	VK2RHV	Newcastle
52.330	VK3RGG	Geelong
52.350	VK6RTU	Kalgoorlie
52.370	VK7RST	Hobart
52.400	VK7RNT	Launceston
52.420	VK2RSY	Sydney
52.425	VK2RGB	Gunnedah
52.435	VK3RMV	Hamilton

6m BEACONS

FREQ	CALL SIGN	LOCATION
52.440	VK4RTL	Townsville
52.510	ZL2MHF	Mt. Clivie
53.000	VK5VF	Mount Lofty
2m BEACONS		
144.400	VK4RTT	Mt. Mowbullian
144.420	VK2RSY	Sydney
144.475	VK1RTA	Canberra
144.550	VK5RSE	Mt. Gambier
144.600	VK6RTT	Carnarvon
144.700	VK3RTG	Vermont
144.800	VK5VF	Mt. Lofty
144.900	VK7RTX	Ulverstone
145.000	VK6RTV	Perth
70cm BEACONS		
432.420	VK2RSY	Sydney
432.410	VK6RRT	Carnarvon
432.440	VK4RBB	Brisbane
432.450	VK3RMB	Mt. Bunningyong

23cm BEACONS

FREQ	CALL SIGN	LOCATION
1266.570	VK2RUG	Central Coast
1296.420	VK2RSY	Sydney

EVERYTHING YOU EVER WANTED TO

By now, many amateurs will have heard people talking about 'Packet Radio'. Most people, amateurs included, haven't got a clue what this means! Let's have a look at this new communications method - and what it means to amateur radio.

Most amateurs are familiar with radio teletype (RTTY). It's an adaptation of a commercial system, using two tones to represent two digital states. Using various combinations of these tones to represent characters, communication is possible between two stations using equipment capable of decoding the tones.

RTTY was designed as a slow speed, narrow band facility compatible with electro-mechanical printers of the time. Thus channel throughput was agonisingly slow. The RTTY code is efficient, but can be corrupted by atmospheric QSB (fading), multiple path reception, and so on. Packet radio is similar to RTTY in many respects, except for a few important differences.

While Packet Radio is a digitally encoded radio signal like RTTY, it incorporates error detection and hand-shaking to ensure data integrity. A computed value called 'Frame Check Sequence' is sent along with each transmission which allows the receiving station to check for errors. The receiving station computes its own FCS of the received data, compares this value to the FCS value sent in the packet and, if identical, issues an acknowledgement return packet (ACK). If different, a "not acknowledged" or NAK packet is returned. The transmitting station then re-sends the previous packet. This procedure continues until the acknowledgement is received or the link times out on retry (a limit set by the operator). If the receiving station does not

Unfortunately, there is already disagreement about HOW the packets should be constructed. Two main systems of packet radio have been established and, like VHS Beta video tape, the two are similar, but aren't compatible! The only difference is in the addressing schemes.

Here in Australia, most Package Radio work has been based on the research and development work of the Vancouver (Canada) Amateur Digital Communications Group. This protocol, called the 'VADCG' protocol is the one used by most amateurs in Sydney, Melbourne and Brisbane, where Packeteers have set up groups to further interest in Packet Radio.

The alternative system, recently adopted by the ARRL as 'the international standard', is the AX-25 protocol. Needless to say, the ARRL's 'declaration' has not endeared itself to the VADCG who have said they will continue using their protocol because of its inherent advantages.

The VADCG group have evolved the current V2 protocol from the earlier (original) development. This protocol has been designed on a 'modular' basis to implement the software 'layering' structures recommended for computer communications. As part of this structure, network address headers are implemented in the address field. The design philosophy has endeavoured to keep addressing overheads to a minimum. The address field itself is derived from the source and destination call signs, and consists of hexadecimal codes. This allows a specialised function of the protocol controllers called 'selective receive' to be used. This feature greatly features CPU loading: it allows very high speed operation in addition to the terminal interface

SYNC (2 bytes)	FLAG (1 byte)	ADDRESS (6 bytes)	CONTROL (1 byte)	INFORMATION (Up to 200 bytes)	FCS (2 bytes)	FLAG (1 byte)
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Fig 1: Construction of a 'packet' using the VADCG V2 or AX-25 system. The difference between the systems basically lies in the way the packets are addressed.

send a special acknowledgement signal within a certain period of time, the transmitting station sends the packet again - and keeps doing so until the acknowledgement is received.

Thus Packet Radio is virtually guaranteed error-free. The other huge advantage of Packet Radio is that it is extremely efficient of spectrum space. All users share a common frequency - and because there can be quite a number of users, that means that all of them are freeing up other spectrum space which might have been tied up before with inefficient modes such as systems employing continuous carriers or pilot tones for synchronisation which limit a radio channel to one user at a time. Because of the "bursty" nature of packet transmission, over ten pairs of stations may be "linked" and "chatting" over a single VHF FM channel.

A packet, quite simply, is a collection of ASCII data, information, etc, which can be communicated - by radio, by phone lines, etc. Inside the 'packet' is the message or information to be sent, together with a number of 'fields' of information which identifies the source and destination, addresses, network control parameters and protocol control codes.

The information contained in the packet can be virtually anything: Data, text, program listings, even digitised speech... anything that can be expressed in digital form can be transmitted.

'Packet' technology has been around for some time now in computer usage. Where a number of computers are 'networked' together, they usually communicate by sending 'packets' of data between each other. In Packet Radio, the same thing happens. Each packet is constructed to be unambiguous, and within the same system, all packets constructed in the same way.

structure allows 'host level programs to operate packet controller in a simple fashion. Conversely, the AX25 group (backed by the ARRL group) maintain that it was the AX25 protocol that encouraged the rapid expansion of packet radio with the provision of 'digipeating' functions in each unit and amateur call signs in each packet. This made 'reading the mail' so much easier. The publishing of the standard backed by the ARRL has enabled commercial manufacturers to produce packet controllers, thereby opening this interesting mode to all amateurs. It would appear that the AX-25 lobby has support in England as well as America.

And when the amateur packet radio satellite is launched (later this year) it will carry the AX-25 mode. 'No problem', say the VADCG group. 'We can live with both systems. We'll simply include a Gateway node in the system which will convert protocols. Then we'll have the best of both worlds.' Who is right? Only time will tell! It appears that both systems will continue for some time to come!

Figure 1 shows the construction of the packet. (Both protocols use the same basic construction). Each section of the packet (which may be up to 200 bytes long) has a specific function. Let's look at them:

SYNC: Used for synchronising the receiving equipment before sending the FLAG following. It is only used for the first packet in a group of packets. 16 bits of alternating zeros and ones for synchronisation.

FLAG: A special 8 bit character (binary 01111110 or 7E hex). It marks the beginning and the end of the packet. If another packet is sent immediately after this packet, the second packet may use the ending flag of the first packet as its beginning flag.

KNOW ABOUT PACKET RADIO...

ADDRESS: A 6 byte field consisting of 2 bytes each for source address, destination address and network address. As the source and destination addresses are derived from each individual callsign, the resultant fields are unique.

CONTROL: Used to describe the type of packet. An 8 bit field which also contains acknowledgement information which ensures no packets are missed or out of order.

INFORMATION: The message being sent. It can be up to 200 bytes long. If the message is over 200 bytes, the remainder will be sent in the next packet(s).

FRAME CHECK SEQUENCE: Ensures that no bits are incorrect in the packet. It is 16 bits long.

FLAG: End flag, identical to start flag (can also be start flag of next frame).

What's in a Packet Radio Station?

To build up a packet station, all you need are three basic ingredients:

- (1) A user terminal
- (2) A Terminal Node Controller
- (3) An amateur transceiver on the band required.

The terminal can be simple or complex: anything from a video terminal and keyboard (perhaps a printer too) right through to a full scale computer installation. Whatever is chosen needs only to have an RS232/V24 compatible link to the TNC. However, the terminal computer must have its own communications program.

If the above all sounds pretty complex, it is: especially to the computer novice! But the Packeteers have developed some pretty smart equipment to take care of all the 'housekeeping'. The TNC is essentially two main parts of one piece of equipment: the hardware and the software. The hardware not only switches the transceiver, it generates and encodes the packets to be transmitted, monitors the channel for packets addressed to this station, accepts input from keyboard and outputs to the screen or printer.

In addition, it also houses the software.

The TNC can be regarded as a micro in itself. In fact, many packeteers use their existing micros to perform many of the tasks above, having special software written to do it. The software is written in assembly language for speed (BASIC and similar languages are far, far too slow). This means that every computer type must have its own

software written to perform the functions, while maintaining the same protocol so that it can work with different types of computers. The problem of having to provide a unique packet program specially written for every type of computer led the development of the TNC - a smart peripheral controller that removed the basic 'house-keeping' chores from the personal computer.

The TNC is designed around EPROMS so that upgrades (and there have been many of them) are simple to accommodate. When the TNC has received data from the computer or terminal, it first converts it to a packet by attaching the destination and control information header, and the tail containing the result of the FCS calculation for error detection, plus the beginning/end flags. It is then sent via an RS-232C serial port to a modem which produces the audio frequency shift keyed (AFSK) modulation by putting one of two tones corresponding to a mark or space into the microphone input socket.

The packet is then sent out on the air, ready for the station to which it is addressed to respond to it.

Pretty self explanatory, really! The station obviously must be capable of operation on the frequency required - most development is on 2 metres - and the transmitter/receiver or transceiver must be capable of external switching.

Already repeaters for Packet Radio ('Digipeaters') are operating in Sydney and Melbourne. A frequency of operation in the 2 metre band has yet to be decided, but is likely to be 147.500MHz or 147.600MHz (perhaps both). As would be expected in Australia, these run the VADGC protocol.

On the drawing board (as soon as licencing changes allow it) will be high speed inter-city links using linked digipeaters. And when the PACSAT satellite is launched (proposed this year) satellite Packet will become a reality. This will require the establishment of a Gateway Node, and at the same time Gateway Nodes for other Packet Radio uses such as HF links, bulletin board systems, RTTY or AMTOR link nodes, etc are being planned.

Further into the future, Packet Radio will allow diversification into such areas as:

- Satellite network technologies.
- Satellite data communication.
- Local Digital Switching Networks.
- Advanced Digital Signal processing
- Modulation and speech coding techniques (yes, packet speech)
- Specialised digital graphic techniques.

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Whoops: almost missed out. And because there are new products arriving every day, there'll always be something new and exciting at your nearest Dick Smith Electronics store.

Coughing Ashtray

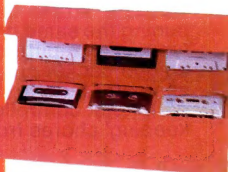
It will certainly be the most talked-about item at the party; and maybe the most talking! Help someone kick the weed. When they put the butt in the ashtray it coughs. And tells them in no uncertain terms what it thinks of the habit! A perfect gift for the non-smoker (smokers will think twice about lighting up again!) Cat Y-5060



\$19⁹⁵

Cassette Organiser

Whew! We'd hate to miss this one: then you'd really be in a mess. But not with this great new cassette organiser in your car! Holds 12 cassettes in separate pockets, fixes to car with Velcro tape (supplied). And removes & folds neatly out of the way. Fantastic idea. Like Henry's Ford, you can have it in any colour as long as it's black! Cat C-3820



\$19⁹⁵

"Walkman" Joggers Pack

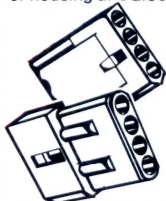
You know how it is when you take your music on the run. Bounce, bounce . . . and where do you put your cassettes? This fantastic carry case holds your 'Walkman' or similar, there's a separate wallet for 3 cassettes and it's all fixed to a strong webbed belt. It has a hook for your 'phones, too! Cat A-4013



\$19⁹⁵

Connector Packs

How's this for a last minute bargain? Connector packs in either 2, 3, 4, 5, or 6 way. All come with nylon connector or housing and 2.36mm tin plated brass pin terminals for long life and reliability with no loose ends!

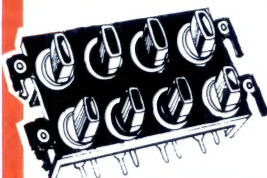


As used in most cars - ideal replacements

Cat P-5102	\$1.50	2-way
Cat P-5103	\$1.75	3-way
Cat P-5105	\$1.90	4-way
Cat P-5106	\$2.25	6-way
Cat P-5192	\$2.95	12-way

Captive Speaker Wire Connector

Don't want those speaker wires to get away? Capture them with this 8 terminal speaker wire connector! PCB mounting, designed for four stereo pairs (ie mainmain and remote speakers). Turning action grips the wire positively and firmly. As used in new EA Mosfet Amplifier Cat H-6770



\$2⁹⁵

Ultra-mini DC Connectors



As used in 'Walkman' type devices. Tiny (1.3mm) connectors for where there's no room to spare. Matching plug and socket.

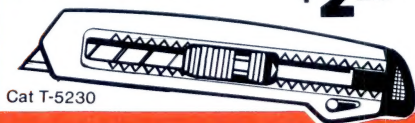
Plug Cat P-1643	45¢
Socket Cat P-1663	60¢

Retractable Snap Blade Knife

Knife blade always blunt? Well, we've solved the dilemma! The knife that's never blunt. Just snap of the end of the blade and it's sharp again (tool provided!) Made of sturdy plastic with 18mm locking retractable blade.

On card with spare blades.

\$2²⁰



Cat T-5230

Plug-in Fuses

Much better than the old ones. As used in a lot of modern Japanese cars, these plug-in fuses are colour coded so you can tell at a glance what rating they are. Quick and easy to replace: Keep some in the glove box in case the lights go out.

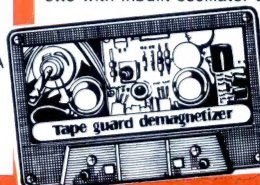


Card of 5 fuses: 5, 10, 15, 20 & 25A Cat S-4488

\$1⁹⁵

Tape Head Demagnetiser

Tapes sounding old - even the new ones? Perhaps your heads need demagnetising! This fantastic cassette with inbuilt oscillator circuitry slips straight into your machine and demagnetises the heads. Save your tapes before they get any worse and stop ruining your new ones. Amazing value! Cat C-7224



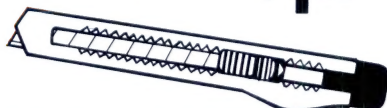
\$14⁹⁵

Fine Snap Knife

Smaller version of above knife, designed for finer work. This one also has a retractable blade and it's only 9mm wide so you can finish that job neatly round the edges. On card with spare blades.

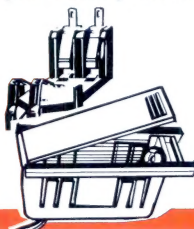
Cat T-5235

\$1⁵⁰



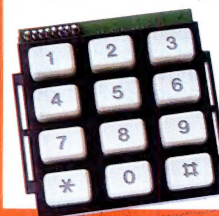
9V Battery Holders

Fantastic for that kit you've been working on! Two styles of battery holders ready to fit. One for PCB mounting and one for external panel mounting (complete with door!). Complete with battery connections. PCB Mounting: **\$2⁹⁵** Cat P-6220. . . . Panel Mounting: **\$3⁹⁵** Cat P-6218. . . .



Push Button "Phone" Pad

At this crazy price, it's worth keeping one in the junk box: just in case! This 12 key numeric pad with positive movement is great for computer projects, etc. Cat J-1001



\$4⁹⁵

(10 up \$4.00 ea)

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Just to say 'thanks' for your patronage (and for investing a dollar in the Dick Smith Electronics catalogue, we're giving you a dollar back!

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Just fill in the back of this coupon and drop it into your nearest Dick Smith Electronics store or send it to DSXpress (address on back). You'll receive up to six mailers each year full of goodies plus details of 'DSXpress Only' special offers you wouldn't get to hear of otherwise! There's no obligation - and it's free!



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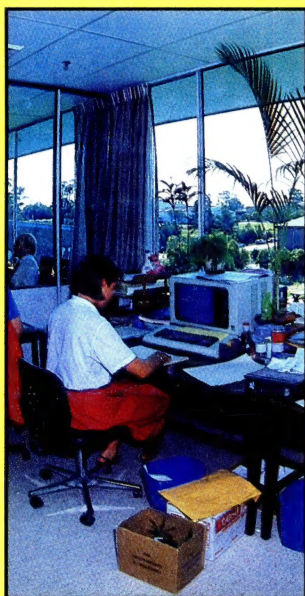
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